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TEMPERATURE, PRESSURE, DENSITY,  
AND WIND MEASUREMENTS IN THE  
STRATOSPHERE AND MESOSPHERE, 1966

by

*W. S. Smith, J. S. Theon, P. C. Swartz, L. B. Katchen*

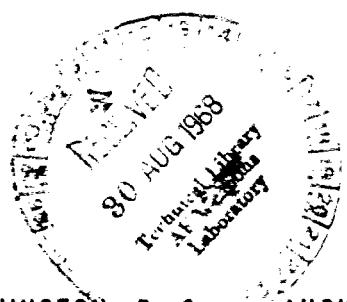
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*University of Michigan*

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IN THE STRATOSPHERE AND MESOSPHERE, 1966

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

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## ABSTRACT

Complete data are presented from a total of 43 rocket-borne experiments conducted at Wallops Island, Virginia; Churchill, Canada; Barrow, Alaska; Natal, Brazil; and Ascension Island in the South Atlantic Ocean during 1966. Temperature, pressure, density, and wind profiles from 39 grenade experiments, and temperature, pressure, and density profiles from four pitot-static tube experiments covering the altitude range of approximately 30 to 90 kilometers have been compiled. No attempt has been made to analyze the meteorological significance of these data in this report. Error analyses are included for the results of each of the 39 grenade experiments.

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# TEMPERATURE, PRESSURE, DENSITY, AND WIND MEASUREMENTS IN THE STRATOSPHERE AND MESOSPHERE, 1966

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## INTRODUCTION

During 1966, 43 rocket grenade and pitot-static tube experiments were performed by the Goddard Space Flight Center and the University of Michigan. These soundings were conducted at Barrow, Alaska ( $71^{\circ}\text{N}$ ); Churchill, Canada ( $59^{\circ}\text{N}$ ); Wallops Island, Virginia ( $38^{\circ}\text{N}$ ); Natal, Brazil ( $6^{\circ}\text{S}$ ); and Ascension Island ( $8^{\circ}\text{S}$ ). This report presents the data obtained from these soundings; however, no analysis of the meteorological significance of the data has been included here. This report is a record of the unsmoothed measurements which may serve as a basis for further investigation and interpretation of the structure of the upper atmosphere.

The objectives of this program are to obtain a sample of the structure of the mesosphere and lower thermosphere which is as representative of these regions as possible, and to investigate specific phenomena which occur in these regions. In order to extend the coverage over the widest possible geographic area and to permit more accurate analyses, the GSFC soundings are coordinated with soundings in other parts of the world whenever possible.

## EXPERIMENTAL METHODS

The grenade experiment and the pitot-static tube experiment are two of several techniques employed in the GSFC Meteorological Sounding Rocket Program. The experiments are described only briefly here since the details of the instrumentation and data reduction have been published (References 1, 2, and 3).

In the grenade experiment, 1, 2, and 3-pound explosive charges (grenades) are carried aloft in the nose cone of a Nike-Cajun sounding rocket. The grenades are ejected and exploded at 2 to 5-km intervals as the rocket ascends. The current payload carries 19 grenades, permitting an

average vertical resolution in the data of approximately 3 km. The rocket position and the exact position of each explosion are determined by a Doppler tracking system, a precision radar such as the AN/FPS-16, or both. The time of each explosion is detected by sensors in the payload and telemetered to the ground. A ground-based array of hot-wire microphones capable of responding to frequencies in the 4-hertz range is used to detect and record the sound waves generated by the exploding grenades. The measured experimental parameters are the times and positions of the grenade explosions, and the arrival times of the sound waves at the ground-based microphones.

Elevation and azimuth angles of the normal to each arriving sound wave are computed by applying a least-squares-fit to the arrival times at the various microphones. Each wave is then analytically traced along its path of propagation through the atmosphere by means of Snell's law. Data from balloonsondes and rocketsondes obtained near the time of the grenade sounding are utilized to account for the influence of wind and temperature in retracing the path of the sound wave from the ground to the first explosion; above this altitude, the results of the experiment itself are used for each succeeding explosion. The position of the wave as determined by tracing is compared with the known position of the wave source, the grenade explosion. The amount by which the sound wave has been displaced horizontally from one explosion to the next is a measure of the average wind velocity vector in the layer between the two adjacent explosions. The average speed of sound and hence the average temperature of the atmosphere between two adjacent explosions may also be determined. The temperature profile consists of discrete points, each of which represents the average temperature for the vertical layer between consecutive explosions. The temperature profile is used to derive the pressure and density profiles, using the pressure measured by the accompanying balloonsonde near the top of its ascent. Pressure is calculated from the barometric equation by performing an integration over the temperature profile starting with the known balloonsonde pressure (References 4, 5, and 6). The density is then computed from the temperature and pressure, using the equation of state.

In the pitot-static tube experiment, two radioactive ionization gages in the payload measure ambient density and pressure as the Nike-Apache rocket ascends. The gage measurements are telemetered to ground-based receiving and recording equipment. The rocket trajectory is provided by Doppler tracking, radar tracking, or both, to determine the altitude of the measurements and the velocity of the rocket. The measured experimental parameters are ram pressure, static pressure, and velocity and position of the payload in space. The ram pressure is related to density by the Rayleigh equation and the equation of state in the continuum region, and by a modified thermal transpiration equation in the free-molecular flow region. The temperature profile is computed from the pressure and density profiles with the equation of state, or by integrating the density profile using a form of the hydrostatic equation.

## RESULTS

The launch sites of Barrow, Alaska ( $71^{\circ}\text{N}$ ); Churchill, Canada ( $59^{\circ}\text{N}$ ); Wallops Island, Virginia ( $38^{\circ}\text{N}$ ); and Natal, Brazil ( $6^{\circ}\text{S}$ ) — Ascension Island ( $8^{\circ}\text{S}$ ) were chosen because they are typical arctic, sub-arctic, temperate, and tropical locations, respectively. Table 1 summarizes the date,

Table 1  
Summary of Soundings.

| Figure | Date         | Time (GMT) | Location  | Experiment |
|--------|--------------|------------|-----------|------------|
| 1      | 24 January   | 0542       | Churchill | grenade    |
| 2      | 1 February   | 2012       | Barrow    | grenade    |
| 3      | 1 February   | 2046       | Wallops   | grenade    |
| 4      | 2 February   | 0202       | Churchill | grenade    |
| 5      | 10 February  | 0710       | Churchill | grenade    |
| 6      | 10 February  | 0748       | Wallops   | grenade    |
| 7      | 10 February  | 0800       | Barrow    | grenade    |
| 8      | 10 February  | 1800       | Churchill | grenade    |
| 9      | 10 February  | 1841       | Wallops   | grenade    |
| 10     | 10 February  | 2130       | Barrow    | grenade    |
| 11     | 27 February  | 1652       | Ascension | pitot      |
| 12     | 1 May        | 2210       | Barrow    | grenade    |
| 13     | 2 May        | 0114       | Wallops   | grenade    |
| 14     | 2 May        | 0119       | Natal     | grenade    |
| 15     | 2 May        | 0232       | Churchill | grenade    |
| 16     | 3 May        | 2201       | Barrow    | grenade    |
| 17     | 4 May        | 0008       | Churchill | grenade    |
| 18     | 4 May        | 0037       | Wallops   | grenade    |
| 19     | 4 May        | 0120       | Natal     | grenade    |
| 20     | 17 June      | 0313       | Churchill | grenade    |
| 21     | 17 June      | 0318       | Barrow    | grenade    |
| 22     | 23 June      | 0635       | Churchill | grenade    |
| 23     | 23 June      | 0752       | Barrow    | grenade    |
| 24     | 7 August     | 0700       | Wallops   | grenade    |
| 25     | 7 August     | 0705       | Natal     | grenade    |
| 26     | 7 August     | 0904       | Churchill | grenade    |
| 27     | 7 August     | 0949       | Churchill | pitot      |
| 28     | 7 August     | 1735       | Churchill | grenade    |
| 29     | 7 August     | 2046       | Wallops   | grenade    |
| 30     | 7 August     | 2326       | Natal     | grenade    |
| 31     | 14 August    | 2035       | Barrow    | grenade    |
| 32     | 15 August    | 0808       | Barrow    | grenade    |
| 33     | 26 August    | 1911       | Wallops   | pitot      |
| 34     | 28 August    | 0423       | Wallops   | pitot      |
| 35     | 30 September | 1735       | Wallops   | grenade    |
| 36     | 30 September | 2350       | Wallops   | grenade    |
| 37     | 1 October    | 0530       | Wallops   | grenade    |
| 38     | 1 October    | 0823       | Natal     | grenade    |
| 39     | 1 October    | 1128       | Wallops   | grenade    |
| 40     | 1 October    | 2039       | Natal     | grenade    |
| 41     | 2 October    | 0220       | Natal     | grenade    |
| 42     | 2 October    | 0820       | Natal     | grenade    |
| 43     | 2 October    | 1409       | Natal     | grenade    |

time, and location of each of the 39 grenade experiments and the four pitot-static tube experiments conducted during 1966. The data include two quasi-synoptic series involving launches from four sites, five series involving launches from three sites, three series where two sites were coordinated, and three series where two or more rockets were launched from a single site during a 12-hour period to determine the diurnal effects in the atmosphere.

The results of the soundings are given in Figures 1 through 43. In the grenade experiment results, the directly measured parameters (temperature and wind) are tabulated in computer printout form on the left-hand page. Tables of interpolated temperature, computed pressure, computed density, percentage of pressure deviation from the 1962 U. S. Standard Atmosphere (Reference 7), and percentage of density deviation from the 1962 U. S. Standard Atmosphere are tabulated on the right-hand page as functions of geometric altitude. The winds interpolated at 5-km intervals are tabulated in component form also. The pitot-static tube results give measured pressure and density, derived temperature, and the percentage of deviation of these parameters from the 1962 Standard Atmosphere values as functions of geometric altitude. Balloonsonde and rocketsonde observations which accompanied the experiments are plotted with the appropriate temperature and wind profile to complete the vertical structure (References 5 and 6).

## ERROR ANALYSIS

An error analysis has been performed for all grenade temperatures and winds reported herein when the data recovery was redundant. In a few instances, data recovery was sufficient to produce a solution, but insufficient to permit an error analysis. The error analysis is based on a study (Reference 8) which demonstrated that more than 90 percent of the experimental error is caused by the inaccuracy in the determination of the sound arrival times at the various microphones, which produces errors in the computed azimuth and zenith angles of the normal to the sound wave. Thus, by treating only azimuth and zenith errors, a good approximation of the total error was obtained.

The problem of obtaining the wind and temperature errors was then performed in two parts. Separate calculations were made, first for the even-numbered layers between grenades, and then for the odd-numbered layers. For each layer, a single azimuth and zenith deviation was computed from the formulas

$$\sigma_{az} = \sqrt{\sigma_{az_U}^2 + \sigma_{az_L}^2}$$

and

$$\sigma_{zen} = \sqrt{\sigma_{zen_U}^2 + \sigma_{zen_L}^2},$$

where the subscripts U and L indicate the azimuth and zenith deviations for the upper and lower grenades bounding a given layer. The calculation is divided into two sections so that the deviations of one layer will not influence the temperature and wind of any other layer significantly.

The error for a given temperature point was computed from the formula

$$\text{Temperature error} = \sqrt{(\Delta T_{az})^2 + (\Delta T_{zen})^2}.$$

where  $\Delta T_{az}$  is the change in temperature induced by the azimuth deviation alone, and  $\Delta T_{zen}$  is the change in temperature caused by the zenith deviation alone. A similar formula is applied for the wind error.

## ACKNOWLEDGMENTS

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Greenbelt, Maryland  
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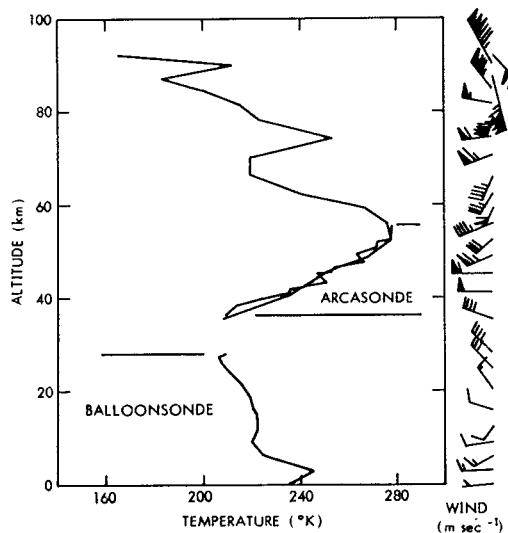
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# FIGURE 1

## CHURCHILL, 24 JANUARY 1966, 0542 GMT.

| WIND DIRECTION<br>degrees | WIND SPEED<br>m/sec | ERROR<br>m/sec ( $\pm$ ) | TEMPERATURE<br>degrees Kelvin | ERROR<br>degrees Kelvin ( $\pm$ ) | HEIGHT<br>meters |
|---------------------------|---------------------|--------------------------|-------------------------------|-----------------------------------|------------------|
| 292.36                    | 39.37               | 2.67                     | 208.52                        | 1.00                              | 35310.35         |
| 271.29                    | 50.89               | 3.16                     | 237.05                        | 1.03                              | 41092.10         |
| 271.72                    | 60.88               | 7.49                     | 251.10                        | 2.65                              | 45445.60         |
| 252.08                    | 64.53               | 9.07                     | 267.69                        | 3.26                              | 49073.50         |
| 239.69                    | 68.13               | 8.30                     | 277.58                        | 2.99                              | 52599.70         |
| 251.26                    | 43.88               | 7.40                     | 276.28                        | 2.74                              | 56028.55         |
| 209.74                    | 61.12               | 7.37                     | 266.70                        | 2.50                              | 59382.55         |
| 224.00                    | 34.72               | 8.87                     | 241.50                        | 2.71                              | 62654.35         |
| 216.90                    | 46.73               | 11.23                    | 219.53                        | 3.06                              | 66330.79         |
| 259.27                    | 64.56               | 12.37                    | 218.86                        | 3.40                              | 70399.80         |
| 264.79                    | 62.14               | 13.44                    | 253.87                        | 4.50                              | 74308.44         |
| 189.87                    | 83.81               | 19.36                    | 223.54                        | 5.93                              | 78070.69         |
| 279.04                    | 56.78               | 15.56                    | 215.09                        | 4.84                              | 81627.05         |
| 322.51                    | 85.26               | 33.63                    | 200.45                        | 10.37                             | 84738.74         |
| 169.63                    | 164.57              | 39.30                    | 182.93                        | 9.69                              | 87229.80         |
| 328.73                    | 185.13              | 28.64                    | 212.45                        | 8.52                              | 89632.55         |
| 140.15                    | 101.19              | 28.70                    | 165.26                        | 6.46                              | 91970.64         |



WIND COMPONENTS  
m/sec

| HEIGHT<br>meters | SOUTH<br>component (+) | WEST<br>component (+) |
|------------------|------------------------|-----------------------|
| 40000.00         | -3.76                  | 48.14                 |
| 45000.00         | -1.75                  | 59.83                 |
| 50000.00         | 23.67                  | 60.71                 |
| 55000.00         | 20.18                  | 46.73                 |
| 60000.00         | 47.76                  | 29.15                 |
| 65000.00         | 32.87                  | 26.63                 |
| 70000.00         | 14.51                  | 59.95                 |
| 75000.00         | 19.77                  | 53.14                 |
| 80000.00         | 33.89                  | 36.55                 |
| 85000.00         | -43.57                 | 43.34                 |
| 90000.00         | -121.15                | 70.80                 |

### LEGEND

 5 m/sec or less  
  50 m/sec  
 10 m/sec  
 DIRECTION OF NORTH WIND

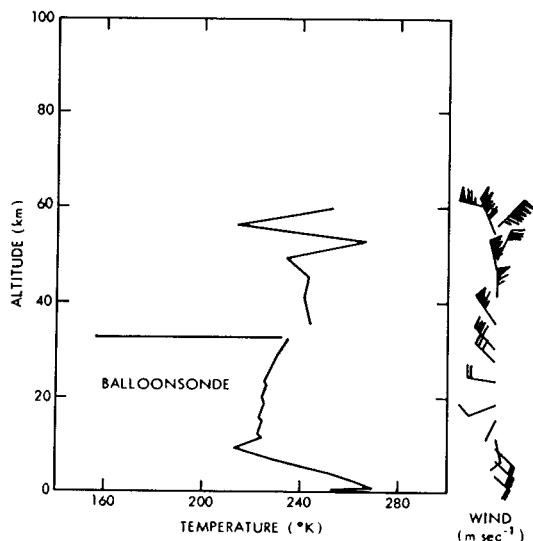
| HEIGHT<br>meters | PRESSURE<br>nt./sq meter |    | DENSITY<br>kg/cu meter | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>(%) | DENSITY<br>deviation<br>(%) |
|------------------|--------------------------|----|------------------------|-------------------------------|------------------------------|-----------------------------|
| 28000.00         | .1397000                 | 04 | .2330902               | 01-                           | 208.80                       | 13.56-                      |
| 29000.00         | .1187595                 | 04 | .1981869               | 01-                           | 208.76                       | 14.58-                      |
| 30000.00         | .1009591                 | 04 | .1685121               | 01-                           | 208.72                       | 15.65-                      |
| 31000.00         | .8502984                 | 03 | .1432858               | 01-                           | 208.68                       | 16.77-                      |
| 32000.00         | .7296865                 | 03 | .1218373               | 01-                           | 208.64                       | 17.92-                      |
| 33000.00         | .6203525                 | 03 | .1036044               | 01-                           | 208.61                       | 19.15-                      |
| 34000.00         | .5274070                 | 03 | .8809433               | 02-                           | 208.57                       | 20.50-                      |
| 35000.00         | .4484035                 | 03 | .7491179               | 02-                           | 208.53                       | 21.96-                      |
| 36000.00         | .3817564                 | 03 | .6275713               | 02-                           | 211.22                       | 23.12-                      |
| 37000.00         | .3260467                 | 03 | .5237965               | 02-                           | 216.85                       | 24.71-                      |
| 38000.00         | .2794701                 | 03 | .4383842               | 02-                           | 221.79                       | 25.89-                      |
| 39000.00         | .2403722                 | 03 | .3603545               | 02-                           | 226.72                       | 26.99-                      |
| 40000.00         | .2074253                 | 03 | .3113410               | 02-                           | 231.65                       | 27.76-                      |
| 41000.00         | .1755594                 | 03 | .2644035               | 02-                           | 236.52                       | 28.50-                      |
| 42000.00         | .1558363                 | 03 | .2252347               | 02-                           | 239.97                       | 29.15-                      |
| 43000.00         | .1355158                 | 03 | .1941241               | 02-                           | 243.20                       | 29.76-                      |
| 44000.00         | .1180674                 | 03 | .1669147               | 02-                           | 246.43                       | 30.34-                      |
| 45000.00         | .1030545                 | 03 | .1488775               | 02-                           | 249.65                       | 30.88-                      |
| 46000.00         | .9012951                 | 02 | .1238006               | 02-                           | 253.63                       | 31.37-                      |
| 47000.00         | .7900533                 | 02 | .1065080               | 02-                           | 258.20                       | 31.80-                      |
| 48000.00         | .6941734                 | 02 | .9203026               | 03-                           | 262.78                       | 32.14-                      |
| 49000.00         | .6113169                 | 02 | .7965946               | 03-                           | 267.35                       | 32.32-                      |
| 50000.00         | .5393390                 | 02 | .6951553               | 03-                           | 270.29                       | 32.32-                      |
| 51000.00         | .4744672                 | 02 | .6078215               | 03-                           | 273.09                       | 32.27-                      |
| 52000.00         | .4214818                 | 02 | .5322096               | 03-                           | 275.90                       | 32.26-                      |
| 53000.00         | .3732148                 | 02 | .4686632               | 03-                           | 277.43                       | 32.08-                      |
| 54000.00         | .3305704                 | 02 | .4156834               | 03-                           | 277.05                       | 31.82-                      |
| 55000.00         | .2927604                 | 02 | .3688452               | 03-                           | 276.66                       | 31.52-                      |
| 56000.00         | .25021418                | 02 | .3268883               | 03-                           | 276.28                       | 31.15-                      |
| 57000.00         | .2294089                 | 02 | .2922173               | 03-                           | 273.50                       | 30.77-                      |
| 58000.00         | .2027527                 | 02 | .2600977               | 03-                           | 270.64                       | 30.41-                      |
| 59000.00         | .1783785                 | 02 | .2328132               | 03-                           | 267.79                       | 30.07-                      |
| 60000.00         | .1576685                 | 02 | .2096599               | 03-                           | 261.94                       | 29.80-                      |
| 61000.00         | .1384394                 | 02 | .1897033               | 03-                           | 254.23                       | 29.69-                      |
| 62000.00         | .1210750                 | 02 | .1710925               | 03-                           | 246.53                       | 29.79-                      |
| 63000.00         | .1054617                 | 02 | .1534519               | 03-                           | 239.43                       | 30.04-                      |
| 64000.00         | .9151590                 | 01 | .1365684               | 03-                           | 233.45                       | 30.10-                      |
| 65000.00         | .7912628                 | 01 | .1211812               | 03-                           | 227.48                       | 30.87-                      |
| 66000.00         | .6815274                 | 01 | .1071910               | 03-                           | 221.50                       | 31.44-                      |
| 67000.00         | .5854426                 | 01 | .9295426               | 04-                           | 219.41                       | 32.02-                      |
| 68000.00         | .5025323                 | 01 | .7984974               | 04-                           | 219.25                       | 32.50-                      |
| 69000.00         | .4313369                 | 01 | .6858845               | 04-                           | 219.09                       | 32.80-                      |
| 70000.00         | .3702027                 | 01 | .5891136               | 04-                           | 218.92                       | 32.93-                      |
| 71000.00         | .3183122                 | 01 | .4945416               | 04-                           | 224.23                       | 32.77-                      |
| 72000.00         | .2749966                 | 01 | .4108329               | 04-                           | 233.19                       | 32.10-                      |
| 73000.00         | .2388995                 | 01 | .3437026               | 04-                           | 242.15                       | 30.84-                      |
| 74000.00         | .2086131                 | 01 | .2894233               | 04-                           | 251.11                       | 28.98-                      |
| 75000.00         | .1824803                 | 01 | .2560354               | 04-                           | 248.29                       | 26.72-                      |
| 76000.00         | .1591513                 | 01 | .2307970               | 04-                           | 240.23                       | 24.37-                      |
| 77000.00         | .1381641                 | 01 | .2073198               | 04-                           | 232.17                       | 22.05-                      |
| 78000.00         | .1193519                 | 01 | .1855343               | 04-                           | 224.11                       | 19.77-                      |
| 79000.00         | .1027421                 | 01 | .1616881               | 04-                           | 221.37                       | 17.42-                      |
| 80000.00         | .8829565                 | 00 | .1404320               | 04-                           | 219.04                       | 14.82-                      |
| 81000.00         | .7576121                 | 00 | .1217924               | 04-                           | 216.71                       | 12.11-                      |
| 82000.00         | .6488410                 | 00 | .1058116               | 04-                           | 213.63                       | 9.40-                       |
| 83000.00         | .5541041                 | 00 | .9214430               | 05-                           | 208.81                       | 7.06-                       |
| 84000.00         | .4714853                 | 00 | .8051586               | 05-                           | 204.00                       | 4.92-                       |
| 85000.00         | .3995663                 | 00 | .7008688               | 05-                           | 198.61                       | 3.13-                       |
| 86000.00         | .3368522                 | 00 | .6125621               | 05-                           | 191.57                       | 1.83-                       |
| 87000.00         | .2821885                 | 00 | .5327197               | 05-                           | 184.54                       | 1.13-                       |
| 88000.00         | .2364975                 | 00 | .4282514               | 05-                           | 192.39                       | .40-                        |
| 89000.00         | .1999027                 | 00 | .3404053               | 05-                           | 204.68                       | 1.23                        |
| 90000.00         | .1700174                 | 00 | .2888822               | 05-                           | 205.03                       | 3.43                        |
| 91000.00         | .1433317                 | 00 | .2701332               | 05-                           | 184.85                       | 4.63                        |

# FIGURE 2

## BARROW, 1 FEBRUARY 1966, 2012 GMT.

| WIND DIRECTION<br>degrees | WIND SPEED<br>m/sec | ERROR*<br>m/sec ( $\pm$ ) | TEMPERATURE<br>degrees Kelvin | ERROR*<br>degrees Kelvin ( $\pm$ ) | HEIGHT<br>meters |
|---------------------------|---------------------|---------------------------|-------------------------------|------------------------------------|------------------|
| 328.98                    | 63.32               |                           | 243.87                        |                                    | 35472.25         |
| 359.32                    | 67.35               |                           | 240.80                        |                                    | 41309.05         |
| 357.19                    | 128.37              |                           | 242.91                        |                                    | 45704.94         |
| 28.64                     | 38.68               |                           | 233.53                        |                                    | 49368.75         |
| 335.43                    | 142.18              |                           | 266.94                        |                                    | 52951.30         |
| 46.10                     | 187.20              |                           | 214.09                        |                                    | 56424.75         |
| 282.36                    | 76.73               |                           | 252.07                        |                                    | 59800.45         |

\* Insufficient data for Error Analysis



| HEIGHT<br>meters | WIND COMPONENTS<br>m/sec |                       |
|------------------|--------------------------|-----------------------|
|                  | SOUTH<br>component (+)   | WEST<br>component (+) |
| 40000.00         | -64.40                   | 7.81                  |
| 45000.00         | -113.44                  | 5.33                  |
| 50000.00         | -50.75                   | -4.86                 |
| 55000.00         | -129.60                  | -55.29                |

### LEGEND

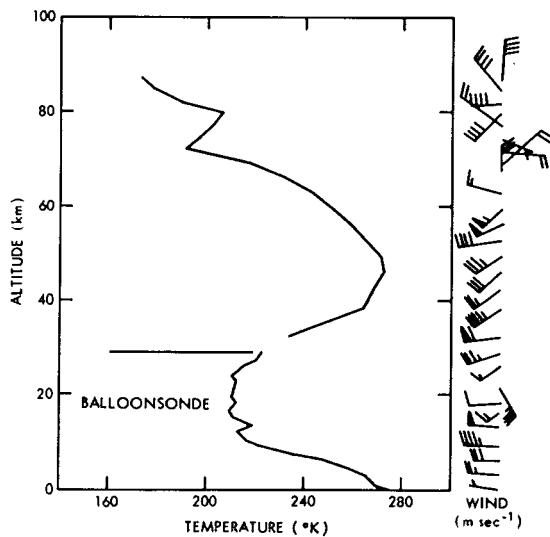
 5 m/sec  
or less       50 m/sec  
 10 m/sec      DIRECTION OF  
NORTH WIND

| HEIGHT<br>meters | PRESSURE<br>nt/sq meter |    | DENSITY<br>kg/cu meter |     | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>(%) | DENSITY<br>deviation<br>(%) |
|------------------|-------------------------|----|------------------------|-----|-------------------------------|------------------------------|-----------------------------|
| 21000.00         | .1048790                | 04 | .1563933               | 01- | 233.63                        | 1.70                         | .06-                        |
| 32000.00         | .9077772                | 03 | .1340523               | 01- | 235.91                        | 2.10                         | 1.12-                       |
| 33000.00         | .7868553                | 03 | .1150780               | 01- | 238.20                        | 2.54                         | .56-                        |
| 34000.00         | .6830043                | 03 | .9833974               | 02- | 240.49                        | 2.95                         | .06                         |
| 35000.00         | .5926815                | 03 | .8918957               | 02- | 242.78                        | 3.32                         | .65                         |
| 36000.00         | .5165235                | 03 | .787329                | 02- | 243.59                        | 3.61                         | 1.78                        |
| 37000.00         | .4494480                | 03 | .6441905               | 02- | 243.06                        | 3.73                         | .71                         |
| 38000.00         | .3909819                | 02 | .5616052               | 02- | 242.54                        | 3.57                         | 4.64                        |
| 39000.00         | .3400331                | 02 | .4894827               | 02- | 242.01                        | 3.11                         | 5.72                        |
| 40000.00         | .2956472                | 03 | .4265142               | 02- | 241.40                        | 2.76                         | 6.71                        |
| 41000.00         | .2562880                | 03 | .3715509               | 02- | 240.96                        | 2.33                         | 7.14                        |
| 42000.00         | .2233724                | 03 | .3227233               | 02- | 241.13                        | 1.54                         | 7.76                        |
| 43000.00         | .1941979                | 03 | .2800154               | 02- | 241.61                        | .64                          | 7.74                        |
| 44000.00         | .1688879                | 03 | .2430381               | 02- | 242.09                        | .35-                         | 7.59                        |
| 45000.00         | .1469236                | 03 | .2110123               | 02- | 242.57                        | 1.46-                        | 7.31                        |
| 46000.00         | .1278233                | 03 | .1838967               | 02- | 242.15                        | 2.67-                        | 7.28                        |
| 47000.00         | .1111153                | 03 | .1615676               | 02- | 239.59                        | 4.08-                        | 7.26                        |
| 48000.00         | .9645020                | 02 | .1417586               | 02- | 237.03                        | 5.71-                        | 7.66                        |
| 49000.00         | .8359571                | 02 | .1242073               | 02- | 234.47                        | 7.46-                        | 6.81                        |
| 50000.00         | .7250951                | 02 | .1055115               | 02- | 232.41                        | 9.11-                        | 2.74                        |
| 51000.00         | .6315754                | 02 | .8845783               | 03- | 248.74                        | 10.36-                       | 2.46-                       |
| 52000.00         | .5529434                | 02 | .7464641               | 03- | 258.06                        | 11.14-                       | 6.80-                       |
| 53000.00         | .4862704                | 02 | .6364088               | 03- | 266.19                        | 11.51-                       | 10.40-                      |
| 54000.00         | .4268092                | 02 | .5925637               | 03- | 250.28                        | 11.96-                       | 6.14-                       |
| 55000.00         | .3717363                | 02 | .5493046               | 03- | 235.76                        | 13.04-                       | 2.04-                       |
| 56000.00         | .3207482                | 02 | .5066574               | 03- | 220.55                        | 14.82-                       | 1.81                        |
| 57000.00         | .2754151                | 02 | .4350307               | 03- | 220.56                        | 16.89-                       | 1.40-                       |
| 58000.00         | .2373608                | 02 | .3567266               | 03- | 231.81                        | 18.53-                       | 8.73-                       |
| 59000.00         | .2060204                | 02 | .2712944               | 03- | 243.06                        | 19.50-                       | 14.64-                      |

# FIGURE 3

## WALLOPS ISLAND, 1 FEB. 1966, 2046 GMT.

| WIND DIRECTION<br>degrees | WIND SPEED<br>m/sec | ERROR<br>m/sec ( $\pm$ ) | TEMPERATURE<br>degrees Kelvin | ERROR<br>degrees Kelvin ( $\pm$ ) | HEIGHT<br>meters |
|---------------------------|---------------------|--------------------------|-------------------------------|-----------------------------------|------------------|
| 260.22                    | 61.13               | .87                      | 233.61                        | .60                               | 32404.10         |
| 240.15                    | 47.29               | 1.31                     | 264.70                        | .81                               | 38130.69         |
| 240.55                    | 23.91               | 1.29                     | 268.64                        | .77                               | 42432.54         |
| 221.11                    | 28.56               | 1.49                     | 272.15                        | .73                               | 46027.79         |
| 237.97                    | 34.28               | 1.64                     | 270.79                        | .76                               | 49542.90         |
| 259.31                    | 39.39               | 1.85                     | 264.73                        | .75                               | 52965.80         |
| 245.86                    | 49.60               | 1.92                     | 259.40                        | .77                               | 56342.35         |
| 227.56                    | 54.86               | 2.23                     | 251.75                        | .77                               | 59620.30         |
| 293.14                    | 16.39               | 2.97                     | 243.15                        | .93                               | 62756.10         |
| .79                       | 30.12               | 3.66                     | 231.57                        | 1.09                              | 65808.14         |
| 50.62                     | 19.58               | 4.62                     | 217.89                        | 1.20                              | 68778.39         |
| 97.39                     | 17.66               | 3.83                     | 191.14                        | 1.09                              | 71684.39         |
| 121.26                    | 6.89                | 3.97                     | 197.73                        | 1.09                              | 74491.04         |
| 306.28                    | 18.21               | 6.31                     | 202.37                        | 1.82                              | 77182.50         |
| 222.91                    | 38.94               | 8.40                     | 206.35                        | 2.11                              | 79820.35         |
| 265.71                    | 41.35               | 6.47                     | 189.49                        | 1.62                              | 82358.04         |
| 320.59                    | 40.89               | 5.88                     | 177.79                        | 1.56                              | 84778.99         |
| 3.69                      | 37.80               | 8.88                     | 173.07                        | 2.11                              | 87065.69         |



| HEIGHT<br>meters | WIND COMPONENTS<br>m/sec |                       |
|------------------|--------------------------|-----------------------|
|                  | SOUTH<br>component (+)   | WEST<br>component (+) |
| 35000.00         | 16.34                    | 51.52                 |
| 40000.00         | 18.41                    | 32.23                 |
| 45000.00         | 18.72                    | 19.36                 |
| 50000.00         | 16.72                    | 30.35                 |
| 55000.00         | 15.12                    | 42.65                 |
| 60000.00         | 31.76                    | 37.40                 |
| 65000.00         | -23.84                   | 3.68                  |
| 70000.00         | -6.24                    | -16.13                |
| 75000.00         | .86                      | -2.00                 |
| 80000.00         | 26.72                    | 27.55                 |
| 85000.00         | -32.18                   | 23.21                 |

### LEGEND

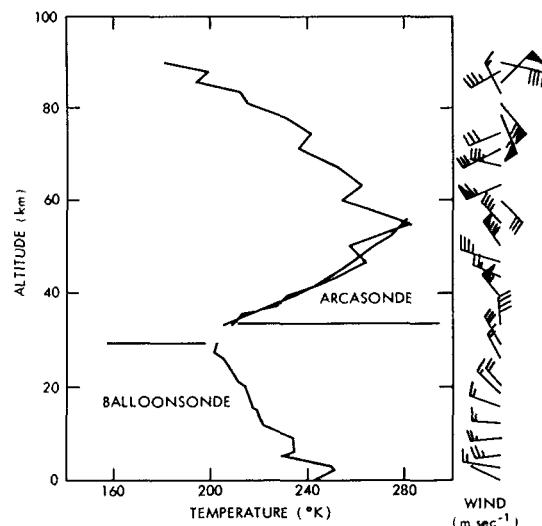
— 5 m/sec or less      ▲ 50 m/sec  
 \ 10 m/sec      DIRECTION OF NORTH WIND ↓

| HEIGHT<br>meters | PRESSURE<br>nt/sq meter |    | DENSITY<br>kg/cu meter |     | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>(%) | DENSITY<br>deviation<br>(%) |
|------------------|-------------------------|----|------------------------|-----|-------------------------------|------------------------------|-----------------------------|
| 28000.00         | .1478250                | 04 | .2326836               | 01- | 221.32                        | 8.53-                        | 7.20-                       |
| 29000.00         | .1269888                | 04 | .1973990               | 01- | 224.11                        | 8.66-                        | 8.09-                       |
| 30000.00         | .1092998                | 04 | .1678138               | 01- | 226.90                        | 8.69-                        | 8.84-                       |
| 31000.00         | .9425168                | 03 | .1429526               | 01- | 229.69                        | 8.60-                        | 9.47-                       |
| 32000.00         | .8142449                | 03 | .1220159               | 01- | 232.48                        | 8.41-                        | 9.98-                       |
| 33000.00         | .7050298                | 03 | .1037044               | 01- | 236.84                        | 8.11-                        | 10.39-                      |
| 34000.00         | .6122885                | 03 | .8804520               | 02- | 242.27                        | 7.70-                        | 10.95-                      |
| 35000.00         | .5334337                | 03 | .7502534               | 02- | 247.70                        | 7.16-                        | 11.35-                      |
| 36000.00         | .4661449                | 03 | .6415566               | 02- | 253.13                        | 6.49-                        | 11.60-                      |
| 37000.00         | .4085279                | 03 | .5504552               | 02- | 258.55                        | 5.70-                        | 11.72-                      |
| 38000.00         | .3590298                | 03 | .4738145               | 02- | 263.98                        | 4.80-                        | 11.71-                      |
| 39000.00         | .3160772                | 03 | .4147629               | 02- | 265.49                        | 3.87-                        | 10.35-                      |
| 40000.00         | .2784360                | 03 | .3641120               | 02- | 266.40                        | 3.03-                        | 8.87-                       |
| 41000.00         | .2453939                | 03 | .3198021               | 02- | 267.32                        | 2.28-                        | 7.47-                       |
| 42000.00         | .2163747                | 03 | .2810201               | 02- | 268.24                        | 1.63-                        | 6.16-                       |
| 43000.00         | .1908785                | 03 | .2470304               | 02- | 269.19                        | 1.07-                        | 4.94-                       |
| 44000.00         | .1684684                | 03 | .2172391               | 02- | 270.17                        | .60-                         | 3.82-                       |
| 45000.00         | .1487622                | 03 | .1911366               | 02- | 271.14                        | .22-                         | 2.79-                       |
| 46000.00         | .1314250                | 03 | .1682545               | 02- | 272.12                        | .06                          | 1.84-                       |
| 47000.00         | .1161292                | 03 | .1488640               | 02- | 271.77                        | .24                          | .52-                        |
| 48000.00         | .1026001                | 03 | .1317097               | 02- | 271.38                        | .29                          | .02                         |
| 49000.00         | .9063474                | 02 | .1165163               | 02- | 270.99                        | .32                          | .20                         |
| 50000.00         | .8004205                | 02 | .1032877               | 02- | 269.97                        | .32                          | .58                         |
| 51000.00         | .7064452                | 02 | .9176268               | 03- | 268.20                        | .26                          | 1.18                        |
| 52000.00         | .6230122                | 02 | .8146300               | 03- | 266.43                        | .11                          | 1.70                        |
| 53000.00         | .5489954                | 02 | .7226320               | 03- | 264.67                        | .09-                         | 1.73                        |
| 54000.00         | .4834041                | 02 | .6401110               | 03- | 263.09                        | .31-                         | 1.38                        |
| 55000.00         | .4253405                | 02 | .5666224               | 03- | 261.51                        | .50-                         | 1.04                        |
| 56000.00         | .3739765                | 02 | .5012209               | 03- | 259.94                        | .69-                         | .72                         |
| 57000.00         | .3285300                | 02 | .4438544               | 03- | 257.86                        | .86-                         | .59                         |
| 58000.00         | .2882970                | 02 | .3930557               | 03- | 255.53                        | 1.05-                        | .56                         |
| 59000.00         | .2526984                | 02 | .3476971               | 03- | 253.19                        | 1.26-                        | .50                         |
| 60000.00         | .2212254                | 02 | .3074140               | 03- | 250.70                        | 1.50-                        | .48                         |
| 61000.00         | .1934102                | 02 | .2717343               | 03- | 247.96                        | 1.78-                        | .53                         |
| 62000.00         | .1688470                | 02 | .2398766               | 03- | 245.22                        | 2.09-                        | .23                         |
| 63000.00         | .1471739                | 02 | .2116750               | 03- | 242.22                        | 2.37-                        | .39-                        |
| 64000.00         | .1280393                | 02 | .1870858               | 03- | 238.43                        | 2.63-                        | .68-                        |
| 65000.00         | .1111486                | 02 | .1650330               | 03- | 234.63                        | 2.89-                        | .97-                        |
| 66000.00         | .9626347                | 01 | .1453794               | 03- | 230.68                        | 3.16-                        | 1.19-                       |
| 67000.00         | .8315119                | 01 | .1281342               | 03- | 226.08                        | 3.45-                        | 1.16-                       |
| 68000.00         | .7151223                | 01 | .1126469               | 03- | 221.47                        | 3.81-                        | 1.17-                       |
| 69000.00         | .6146215                | 01 | .9919980               | 04- | 215.85                        | 4.25-                        | .80-                        |
| 70000.00         | .5247016                | 01 | .8846001               | 04- | 206.64                        | 4.95-                        | 1.05                        |
| 71000.00         | .4447416                | 01 | .7847601               | 04- | 197.43                        | 6.07-                        | 2.66                        |
| 72000.00         | .3746367                | 01 | .6802135               | 04- | 191.87                        | 7.50-                        | 2.14                        |
| 73000.00         | .3151527                | 01 | .5652921               | 04- | 194.22                        | 8.76-                        | 2.31-                       |
| 74000.00         | .2656790                | 01 | .4708576               | 04- | 196.57                        | 9.55-                        | 6.11-                       |
| 75000.00         | .2244079                | 01 | .3936452               | 04- | 198.60                        | 9.89-                        | 9.19-                       |
| 76000.00         | .1898595                | 01 | .3301726               | 04- | 200.33                        | 9.78-                        | 11.62-                      |
| 77000.00         | .1608690                | 01 | .2773669               | 04- | 202.05                        | 9.24-                        | 13.59-                      |
| 78000.00         | .1364944                | 01 | .2335538               | 04- | 203.60                        | 8.25-                        | 15.07-                      |
| 79000.00         | .1159610                | 01 | .1969627               | 04- | 205.11                        | 6.79-                        | 16.15-                      |
| 80000.00         | .9858289                | 00 | .1674110               | 04- | 205.15                        | 4.89-                        | 16.25-                      |
| 81000.00         | .8358935                | 00 | .1466976               | 04- | 198.51                        | 3.03-                        | 11.73-                      |
| 82000.00         | .7048314                | 00 | .1279773               | 04- | 191.87                        | 1.68-                        | 7.39-                       |
| 83000.00         | .5911145                | 00 | .1104865               | 04- | 186.38                        | .86-                         | 3.92-                       |
| 84000.00         | .4933331                | 00 | .9466643               | 05- | 181.55                        | .52-                         | 1.00-                       |
| 85000.00         | .4098756                | 00 | .8052501               | 05- | 177.32                        | .63-                         | 1.22                        |
| 86000.00         | .3394352                | 00 | .6747134               | 05- | 175.26                        | 1.07-                        | 1.96                        |
| 87000.00         | .2804898                | 00 | .5641876               | 05- | 173.20                        | 1.73-                        | 2.50                        |

# FIGURE 4

## CHURCHILL, 2 FEBRUARY 1966, 0202 GMT.

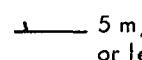
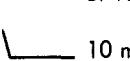
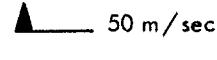
| WIND DIRECTION<br>degrees | WIND SPEED<br>m/sec | ERROR<br>m/sec ( $\pm$ ) | TEMPERATURE<br>degrees Kelvin | ERROR<br>degrees Kelvin ( $\pm$ ) | HEIGHT<br>meters |
|---------------------------|---------------------|--------------------------|-------------------------------|-----------------------------------|------------------|
| 358.13                    | 39.04               | 1.35                     | 204.63                        | .66                               | 33419.70         |
| 325.50                    | 57.02               | 4.30                     | 231.98                        | 1.58                              | 39015.00         |
| 299.79                    | 26.84               | 6.45                     | 251.79                        | 2.63                              | 43233.00         |
| 294.98                    | 37.21               | 7.54                     | 264.07                        | 2.80                              | 46726.30         |
| 338.56                    | 77.75               | 9.14                     | 257.17                        | 3.21                              | 50129.20         |
| 319.53                    | 37.26               | 7.23                     | 283.53                        | 2.60                              | 55039.55         |
| 135.73                    | 27.94               | 21.97                    | 252.99                        | 5.91                              | 59820.05         |
| 249.85                    | 67.27               | 15.22                    | 262.09                        | 4.42                              | 63366.50         |
| 286.84                    | 32.52               | 10.57                    | 252.16                        | 3.75                              | 67266.79         |
| 244.73                    | 27.85               | 15.54                    | 235.98                        | 4.22                              | 71009.69         |
| 252.47                    | 28.36               | 17.24                    | 240.54                        | 4.90                              | 74624.29         |
| 166.94                    | 54.96               | 9.19                     | 230.52                        | 2.71                              | 78093.85         |
| 144.74                    | 70.79               | 10.40                    | 215.15                        | 2.67                              | 80991.30         |
| 328.96                    | 16.18               | 9.74                     | 212.28                        | 3.35                              | 83364.10         |
| 42.05                     | 50.52               | 22.00                    | 193.89                        | 5.63                              | 85654.05         |
| 242.49                    | 32.52               | 27.94                    | 198.94                        | 7.10                              | 87854.35         |
| 112.38                    | 40.45               | 24.80                    | 180.92                        | 5.34                              | 89922.30         |



WIND COMPONENTS  
m/sec

| HEIGHT<br>meters | SOUTH<br>component (+) | WEST<br>component (+) |
|------------------|------------------------|-----------------------|
| 35000.00         | -41.27                 | 10.03                 |
| 40000.00         | -39.13                 | 30.19                 |
| 45000.00         | -14.53                 | 28.57                 |
| 50000.00         | -70.21                 | 28.62                 |
| 55000.00         | -28.70                 | 24.22                 |
| 60000.00         | 20.16                  | -15.31                |
| 65000.00         | 9.52                   | 49.73                 |
| 70000.00         | 6.14                   | 26.79                 |
| 75000.00         | 13.41                  | 22.76                 |
| 80000.00         | 56.34                  | -31.13                |
| 85000.00         | -30.75                 | -21.78                |

### LEGEND

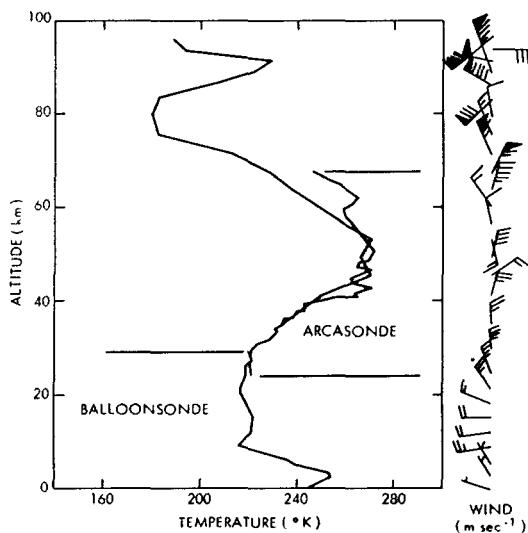
 5 m/sec or less  
 10 m/sec  
 50 m/sec  
 DIRECTION OF  
NORTH WIND

| HEIGHT<br>meters | PRESSURE<br>nt/sq meter |    | DENSITY<br>kg/cu meter | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>(%) | DENSITY<br>deviation<br>(%) |
|------------------|-------------------------|----|------------------------|-------------------------------|------------------------------|-----------------------------|
| 20000.00         | .1151781                | 04 | .1989598               | 01- 201.68                    | 17.16-                       | 7.36-                       |
| 30000.00         | .9738921                | 03 | .1676754               | 01- 202.34                    | 18.64-                       | 8.92-                       |
| 31000.00         | .8232756                | 03 | .1413971               | 01- 203.01                    | 20.10-                       | 10.46-                      |
| 32000.00         | .6975562                | 03 | .1193103               | 01- 203.68                    | 21.54-                       | 11.98-                      |
| 33000.00         | .5908863                | 03 | .1007349               | 01- 204.35                    | 22.99-                       | 12.75-                      |
| 34000.00         | .5013158                | 03 | .8418111               | 02- 207.47                    | 24.43-                       | 14.86-                      |
| 35000.00         | .4266775                | 03 | .6999909               | 02- 212.35                    | 25.74-                       | 17.29-                      |
| 36000.00         | .3645041                | 03 | .5845403               | 02- 217.24                    | 26.88-                       | 19.46-                      |
| 37000.00         | .3124981                | 02 | .4901158               | 02- 222.12                    | 27.87-                       | 21.79-                      |
| 38000.00         | .2688238                | 03 | .4125423               | 02- 227.01                    | 28.72-                       | 23.12-                      |
| 39000.00         | .2320066                | 03 | .3485394               | 02- 231.90                    | 29.44-                       | 24.66-                      |
| 40000.00         | .2008454                | 03 | .2957319               | 02- 236.60                    | 30.05-                       | 25.98-                      |
| 41000.00         | .1743711                | 03 | .2517516               | 02- 241.30                    | 30.56-                       | 27.16-                      |
| 42000.00         | .1518062                | 03 | .2149875               | 02- 245.99                    | 30.98-                       | 28.21-                      |
| 43000.00         | .1325139                | 03 | .1841491               | 02- 250.63                    | 31.32-                       | 29.14-                      |
| 44000.00         | .1159429                | 03 | .1587209               | 02- 254.48                    | 31.59-                       | 29.73-                      |
| 45000.00         | .1016417                | 03 | .1372473               | 02- 258.00                    | 31.83-                       | 30.20-                      |
| 46000.00         | .8926693                | 02 | .1189174               | 02- 261.51                    | 32.03-                       | 30.62-                      |
| 47000.00         | .7850903                | 02 | .1037931               | 02- 263.51                    | 32.23-                       | 30.64-                      |
| 48000.00         | .6904982                | 02 | .9199512               | 03- 261.49                    | 32.50-                       | 30.13-                      |
| 49000.00         | .6067212                | 02 | .8146498               | 03- 259.46                    | 32.83-                       | 29.94-                      |
| 50000.00         | .5325897                | 02 | .7207432               | 03- 257.43                    | 33.24-                       | 29.81-                      |
| 51000.00         | .4678141                | 02 | .6224148               | 03- 261.84                    | 33.60-                       | 31.36-                      |
| 52000.00         | .4119187                | 02 | .5370377               | 03- 267.21                    | 33.80-                       | 32.95-                      |
| 53000.00         | .3636350                | 02 | .4647516               | 03- 272.58                    | 33.83-                       | 34.56-                      |
| 54000.00         | .3218047                | 02 | .4033463               | 03- 277.35                    | 33.63-                       | 36.11-                      |
| 55000.00         | .2854635                | 02 | .3510174               | 03- 283.32                    | 33.22-                       | 37.40-                      |
| 56000.00         | .2532054                | 02 | .3180000               | 03- 277.32                    | 32.76-                       | 36.09-                      |
| 57000.00         | .2239571                | 02 | .2879488               | 03- 271.01                    | 32.40-                       | 34.73-                      |
| 58000.00         | .1975872                | 02 | .2601308               | 03- 264.62                    | 32.18-                       | 33.44-                      |
| 59000.00         | .1737645                | 02 | .2344268               | 03- 258.23                    | 32.10-                       | 32.23-                      |
| 60000.00         | .1523929                | 02 | .2094692               | 03- 253.45                    | 32.15-                       | 31.52-                      |
| 61000.00         | .1335795                | 02 | .1817608               | 03- 256.02                    | 32.16-                       | 32.74-                      |
| 62000.00         | .1172474                | 02 | .1579628               | 03- 258.58                    | 32.01-                       | 33.99-                      |
| 63000.00         | .1030480                | 02 | .1374608               | 03- 261.15                    | 31.64-                       | 35.31-                      |
| 64000.00         | .9061576                | 01 | .1211964               | 03- 260.47                    | 31.09-                       | 35.66-                      |
| 65000.00         | .7962231                | 01 | .1075440               | 03- 257.93                    | 30.43-                       | 35.46-                      |
| 66000.00         | .6987560                | 01 | .9532171               | 04- 255.38                    | 29.70-                       | 35.21-                      |
| 67000.00         | .6124427                | 01 | .8438908               | 04- 252.83                    | 28.80-                       | 34.90-                      |
| 68000.00         | .5359116                | 01 | .7406485               | 04- 248.98                    | 28.01-                       | 34.21-                      |
| 69000.00         | .4679287                | 01 | .6662878               | 04- 244.66                    | 27.10-                       | 33.37-                      |
| 70000.00         | .4076208                | 01 | .5908191               | 04- 240.34                    | 26.16-                       | 32.50-                      |
| 71000.00         | .3541783                | 01 | .5227803               | 04- 236.02                    | 25.20-                       | 31.61-                      |
| 72000.00         | .3074883                | 01 | .4515551               | 04- 237.23                    | 24.08-                       | 32.19-                      |
| 73000.00         | .2671606                | 01 | .3902585               | 04- 238.49                    | 22.66-                       | 32.55-                      |
| 74000.00         | .2323042                | 01 | .3375569               | 04- 239.75                    | 20.92-                       | 32.69-                      |
| 75000.00         | .2020599                | 01 | .2939749               | 04- 239.45                    | 18.86-                       | 32.18-                      |
| 76000.00         | .1755974                | 01 | .2585940               | 04- 236.56                    | 16.56-                       | 30.78-                      |
| 77000.00         | .1523442                | 01 | .2271232               | 04- 233.69                    | 14.05-                       | 29.24-                      |
| 78000.00         | .1319030                | 01 | .1991696               | 04- 230.79                    | 11.31-                       | 27.57-                      |
| 79000.00         | .1132921                | 01 | .1759429               | 04- 225.71                    | 8.38-                        | 25.09-                      |
| 80000.00         | .9815344                | 00 | .1551418               | 04- 220.41                    | 5.31-                        | 22.39-                      |
| 81000.00         | .8421311                | 00 | .1363663               | 04- 215.14                    | 2.31-                        | 17.95-                      |
| 82010.00         | .7208966                | 00 | .1173967               | 04- 213.93                    | .55                          | 15.05-                      |
| 83000.00         | .5166002                | 00 | .1009844               | 04- 212.71                    | 3.41                         | 12.18-                      |
| 84000.00         | .5260823                | 00 | .8846613               | 05- 207.17                    | 6.08                         | 7.48-                       |
| 85000.00         | .4465371                | 00 | .7811517               | 05- 199.14                    | 8.24                         | 1.80-                       |
| 86000.00         | .3770229                | 00 | .6746772               | 05- 184.68                    | 9.87                         | 1.96                        |
| 87000.00         | .3180727                | 00 | .5625542               | 05- 186.97                    | 11.43                        | 2.20                        |
| 88000.00         | .2687007                | 00 | .4735698               | 05- 187.67                    | 13.15                        | 3.42                        |
| 89000.00         | .2262040                | 00 | .4170514               | 05- 188.95                    | 14.49                        | 9.46                        |

# FIGURE 5

## CHURCHILL, 10 FEBRUARY 1966, 0710 GMT.

| WIND DIRECTION<br>degrees | WIND SPEED<br>m/sec | ERROR<br>m/sec ( $\pm$ ) | TEMPERATURE<br>degrees Kelvin | ERROR<br>degrees Kelvin ( $\pm$ ) | HEIGHT<br>meters |
|---------------------------|---------------------|--------------------------|-------------------------------|-----------------------------------|------------------|
| 359.31                    | 25.83               | 1.72                     | 233.92                        | .77                               | 35241.65         |
| 13.27                     | 25.41               | 1.88                     | 249.98                        | .69                               | 41184.00         |
| 59.72                     | 14.79               | 3.37                     | 270.55                        | 1.02                              | 45648.80         |
| 4.70                      | 39.54               | 6.57                     | 266.44                        | 1.80                              | 49376.30         |
| 171.42                    | 14.25               | 6.35                     | 270.36                        | 1.71                              | 53014.20         |
| 350.52                    | 10.89               | 7.73                     | 259.17                        | 1.68                              | 56558.80         |
| 330.17                    | 14.45               | 13.37                    | 248.65                        | 2.59                              | 60019.70         |
| 2.80                      | 45.27               | 10.98                    | 239.13                        | 2.10                              | 63397.20         |
| 9.10                      | 67.47               | 8.23                     | 229.12                        | 1.41                              | 67226.39         |
| 344.08                    | 66.53               | 9.73                     | 213.49                        | 1.67                              | 71454.19         |
| 346.14                    | 14.55               | 7.78                     | 182.99                        | 1.50                              | 75512.80         |
| 357.78                    | 11.66               | 8.40                     | 180.05                        | 1.59                              | 79443.70         |
| 232.54                    | 81.29               | 9.83                     | 183.31                        | 1.66                              | 83230.45         |
| 301.78                    | 89.35               | 12.73                    | 206.17                        | 2.42                              | 86404.90         |
| 350.37                    | 87.08               | 4.43                     | 222.09                        | 1.09                              | 89018.10         |
| 291.92                    | 51.01               | 6.20                     | 228.98                        | 1.46                              | 91551.65         |
| 90.22                     | 32.09               | 23.46                    | 194.46                        | 5.32                              | 93908.90         |
| 242.48                    | 131.28              | 62.73                    | 189.45                        | 14.86                             | 96304.40         |



WIND COMPONENTS  
m/sec

| HEIGHT<br>meters | SOUTH<br>component (+) | WEST<br>component (+) |
|------------------|------------------------|-----------------------|
| 40000.00         | -24.95                 | -4.60                 |
| 45000.00         | -9.96                  | -11.76                |
| 50000.00         | -30.23                 | -3.05                 |
| 55000.00         | .17                    | .07                   |
| 60000.00         | -12.52                 | 7.15                  |
| 65000.00         | -54.17                 | -5.75                 |
| 70000.00         | -64.89                 | 8.29                  |
| 75000.00         | -20.42                 | 5.35                  |
| 80000.00         | -2.67                  | 9.86                  |
| 85000.00         | -4.34                  | 70.89                 |
| 90000.00         | -59.96                 | 27.26                 |
| 95000.00         | 26.41                  | 32.39                 |

### LEGEND

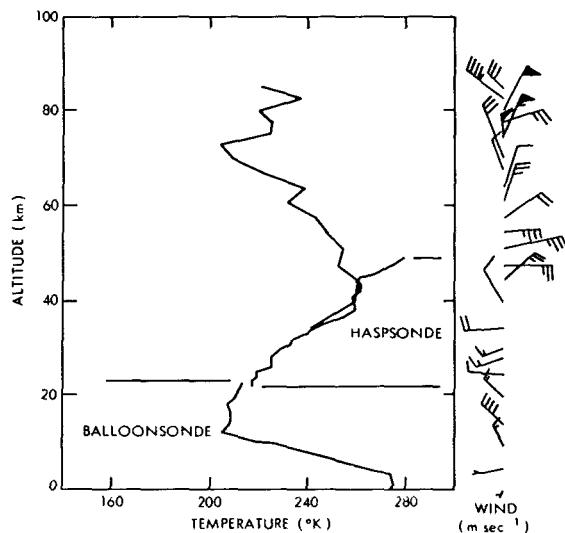
 5 m/sec or less  
  50 m/sec  
 10 m/sec  
  DIRECTION OF  
NORTH WIND

| HEIGHT<br>meters | PRESSURE<br>mt/sq meter |     | DENSITY<br>kg/cu meter |     | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>(%) | DENSITY<br>deviation<br>(%) |
|------------------|-------------------------|-----|------------------------|-----|-------------------------------|------------------------------|-----------------------------|
| 20000.00         | .1304510                | 04  | .2060810               | 01- | 220.53                        | 6.17-                        | 4.05-                       |
| 30000.00         | .1119510                | 04  | .1751516               | 01- | 222.67                        | 6.47-                        | 4.86-                       |
| 31000.00         | .9622008                | 03  | .1491036               | 01- | 224.82                        | 6.69-                        | 5.58-                       |
| 32000.00         | .8282251                | 03  | .1271295               | 01- | 226.96                        | 6.84-                        | 6.21-                       |
| 33000.00         | .7139434                | 03  | .1085616               | 01- | 229.11                        | 6.25-                        | 6.12-                       |
| 34000.00         | .6163110                | 03  | .0884640               | 02- | 231.25                        | 7.10-                        | 6.09-                       |
| 35000.00         | .5327771                | 03  | .7952444               | 02- | 233.40                        | 7.27-                        | 6.03-                       |
| 36000.00         | .4612600                | 03  | .6810021               | 02- | 235.57                        | 7.47-                        | 6.17-                       |
| 37000.00         | .4000005                | 03  | .5838711               | 02- | 238.57                        | 7.67-                        | 6.36-                       |
| 38000.00         | .3474490                | 03  | .5014839               | 02- | 241.37                        | 7.87-                        | 6.55-                       |
| 39000.00         | .3022885                | 03  | .4314708               | 02- | 244.07                        | 8.06-                        | 6.74-                       |
| 40000.00         | .2634128                | 03  | .3718639               | 02- | 246.78                        | 8.26-                        | 6.93-                       |
| 41000.00         | .2298000                | 03  | .3210245               | 02- | 249.48                        | 8.45-                        | 7.12-                       |
| 42000.00         | .2010210                | 03  | .2760017               | 02- | 253.73                        | 8.61-                        | 7.84-                       |
| 43000.00         | .1761924                | 03  | .2375290               | 02- | 258.34                        | 8.68-                        | 8.57-                       |
| 44000.00         | .1547970                | 03  | .2050002               | 02- | 262.95                        | 8.67-                        | 9.20-                       |
| 45000.00         | .1363111                | 03  | .1774893               | 02- | 267.55                        | 8.57-                        | 9.73-                       |
| 46000.00         | .1202426                | 03  | .1550591               | 02- | 270.15                        | 8.44-                        | 9.53-                       |
| 47000.00         | .1061094                | 03  | .1373941               | 02- | 269.05                        | 8.40-                        | 8.19-                       |
| 48000.00         | .9359295                | 02  | .1216859               | 02- | 267.95                        | 8.50-                        | 7.58-                       |
| 49000.00         | .8251347                | 02  | .1077239               | 02- | 266.85                        | 8.66-                        | 7.35-                       |
| 50000.00         | .7273405                | 02  | .9486520               | 03- | 267.10                        | 8.83-                        | 7.62-                       |
| 51000.00         | .6413634                | 02  | .8331544               | 03- | 268.18                        | 8.97-                        | 8.13-                       |
| 52000.00         | .5658556                | 02  | .7321278               | 03- | 269.26                        | 9.06-                        | 8.52-                       |
| 53000.00         | .4995082                | 02  | .6437085               | 03- | 270.34                        | 9.10-                        | 9.37-                       |
| 54000.00         | .4407490                | 02  | .5745687               | 03- | 267.24                        | 9.10-                        | 8.99-                       |
| 55000.00         | .3883446                | 02  | .5123056               | 03- | 264.08                        | 9.16-                        | 8.63-                       |
| 56000.00         | .3416641                | 02  | .4561782               | 03- | 260.92                        | 9.27-                        | 8.32-                       |
| 57000.00         | .3001426                | 02  | .4055656               | 03- | 257.82                        | 9.45-                        | 8.07-                       |
| 58000.00         | .2632688                | 02  | .3592818               | 03- | 254.78                        | 9.64-                        | 7.20-                       |
| 59000.00         | .2305718                | 02  | .3190779               | 03- | 251.74                        | 9.91-                        | 7.76-                       |
| 60000.00         | .2016191                | 02  | .2824197               | 03- | 248.71                        | 10.23-                       | 7.68-                       |
| 61000.00         | .1760293                | 02  | .2494064               | 03- | 245.88                        | 10.60-                       | 7.72-                       |
| 62000.00         | .1534534                | 02  | .2199420               | 03- | 243.06                        | 11.02-                       | 8.09-                       |
| 63000.00         | .1335645                | 02  | .1936823               | 03- | 240.24                        | 11.40-                       | 8.86-                       |
| 64000.00         | .1160724                | 02  | .1702270               | 03- | 237.55                        | 11.73-                       | 9.63-                       |
| 65000.00         | .1007165                | 02  | .1493504               | 03- | 234.93                        | 12.01-                       | 10.38-                      |
| 66000.00         | .8725739                | 01  | .1308481               | 03- | 232.32                        | 12.22-                       | 11.06-                      |
| 67000.00         | .7547764                | 01  | .1144717               | 03- | 229.70                        | 12.36-                       | 11.70-                      |
| 68000.00         | .6516523                | 01  | .1003390               | 03- | 226.25                        | 12.46-                       | 11.97-                      |
| 69000.00         | .5613289                | 01  | .8786656               | 04- | 222.56                        | 12.55-                       | 12.13-                      |
| 70000.00         | .4823412                | 01  | .7677728               | 04- | 218.86                        | 12.62-                       | 12.28-                      |
| 71000.00         | .4134189                | 01  | .6693676               | 04- | 215.17                        | 12.68-                       | 12.43-                      |
| 72000.00         | .3531429                | 01  | .5875584               | 04- | 209.39                        | 12.80-                       | 11.76-                      |
| 73000.00         | .3001349                | 01  | .5179526               | 04- | 201.87                        | 13.11-                       | 10.49-                      |
| 74000.00         | .2535277                | 01  | .4544374               | 04- | 194.36                        | 13.69-                       | 9.38-                       |
| 75000.00         | .2127490                | 01  | .3966808               | 04- | 186.84                        | 14.57-                       | 8.49-                       |
| 76000.00         | .1775508                | 01  | .3386975               | 04- | 182.62                        | 15.63-                       | 9.34-                       |
| 77000.00         | .1478208                | 01  | .2831432               | 04- | 181.88                        | 16.60-                       | 11.79-                      |
| 78000.00         | .1229831                | 01  | .2365399               | 04- | 181.13                        | 17.33-                       | 13.38-                      |
| 79000.00         | .1022467                | 01  | .1974715               | 04- | 180.38                        | 17.82-                       | 15.93-                      |
| 80000.00         | .8498606                | 00  | .1640024               | 04- | 180.53                        | 18.01-                       | 17.95-                      |
| 81000.00         | .7067930                | 00  | .1357475               | 04- | 181.39                        | 18.00-                       | 18.32-                      |
| 82000.00         | .5883552                | 00  | .1124673               | 04- | 182.25                        | 17.93-                       | 18.62-                      |
| 83000.00         | .4902145                | 00  | .9326725               | 05- | 183.11                        | 17.78-                       | 18.89-                      |
| 84000.00         | .4097856                | 00  | .7559537               | 05- | 188.85                        | 17.36-                       | 20.95-                      |
| 85000.00         | .3446391                | 00  | .6124215               | 05- | 196.05                        | 16.45-                       | 23.01-                      |
| 86000.00         | .2916806                | 00  | .4999506               | 05- | 203.25                        | 14.99-                       | 24.44-                      |
| 87000.00         | .2482473                | 00  | .1422395               | 05- | 209.79                        | 13.03-                       | 25.10-                      |
| 88000.00         | .2123055                | 00  | .3426085               | 05- | 215.88                        | 10.59-                       | 25.17-                      |
| 89000.00         | .1823678                | 00  | .2862218               | 05- | 221.97                        | 7.58-                        | 24.87-                      |
| 90000.00         | .1571337                | 00  | .2435665               | 05- | 224.75                        | 4.40-                        | 23.16-                      |
| 91000.00         | .1356428                | 00  | .2077408               | 05- | 227.47                        | .97-                         | 20.03-                      |
| 92000.00         | .1170156                | 00  | .1830948               | 05- | 222.65                        | 2.20                         | 14.32-                      |
| 93000.00         | .1002939                | 00  | .1675428               | 05- | 208.54                        | 4.49                         | 4.96-                       |
| 94000.00         | .8504304                | 01- | .1523598               | 05- | 194.45                        | 5.40                         | 4.42                        |
| 95000.00         | .7162150                | 01- | .1297636               | 05- | 192.28                        | 5.30                         | 7.15                        |
| 96000.00         | .6020381                | 01- | .1103232               | 05- | 190.11                        | 4.73                         | 9.44-                       |

# FIGURE 6

## WALLOPS ISLAND, 10 FEB. 1966, 0748 GMT.

| WIND DIRECTION<br>degrees | WIND SPEED<br>m/sec | ERROR<br>m/sec ( $\pm$ ) | TEMPERATURE<br>degrees Kelvin | ERROR<br>degrees Kelvin ( $\pm$ ) | HEIGHT<br>meters |
|---------------------------|---------------------|--------------------------|-------------------------------|-----------------------------------|------------------|
| 263.93                    | 21.95               | .69                      | 240.62                        | .42                               | 34225.05         |
| 334.24                    | 9.08                | 1.02                     | 259.48                        | .56                               | 39830.80         |
| 50.93                     | 23.48               | 1.74                     | 261.08                        | .80                               | 44063.70         |
| 87.24                     | 22.89               | 1.35                     | 253.18                        | .02                               | 47565.60         |
| 76.69                     | 39.28               | 1.42                     | 254.53                        | .67                               | 50949.85         |
| 83.42                     | 37.45               | 1.93                     | 248.05                        | .88                               | 54263.05         |
| 58.29                     | 20.32               | 3.13                     | 242.96                        | 1.06                              | 57491.65         |
| 6.34                      | 23.28               | 4.65                     | 231.85                        | 1.11                              | 60600.10         |
| 7.02                      | 11.86               | 4.78                     | 239.08                        | 1.15                              | 63632.65         |
| 337.81                    | 8.05                | 3.69                     | 221.52                        | .96                               | 66610.25         |
| 329.68                    | 28.64               | 3.69                     | 209.44                        | .83                               | 69475.94         |
| 355.24                    | 48.99               | 4.61                     | 203.77                        | .86                               | 72276.49         |
| 17.98                     | 55.76               | 4.68                     | 224.43                        | 1.02                              | 74982.20         |
| 72.25                     | 24.39               | 3.29                     | 225.11                        | 1.22                              | 77569.90         |
| 20.36                     | 48.46               | 5.09                     | 219.69                        | 1.12                              | 80071.15         |
| 306.83                    | 42.85               | 5.69                     | 237.25                        | 1.59                              | 82483.79         |
| 310.11                    | 28.78               | 7.62                     | 221.01                        | 1.93                              | 84809.49         |



WIND COMPONENTS  
m/sec

| HEIGHT<br>meters | SOUTH<br>component (+) | WEST<br>component (+) |
|------------------|------------------------|-----------------------|
| 35000.00         | .87                    | 19.35                 |
| 40000.00         | -8.44                  | 3.05                  |
| 45000.00         | -11.13                 | -19.46                |
| 50000.00         | -6.81                  | -33.91                |
| 55000.00         | -5.75                  | -32.66                |
| 60000.00         | -20.73                 | -5.41                 |
| 65000.00         | -9.79                  | .61                   |
| 70000.00         | -29.23                 | 12.51                 |
| 75000.00         | -52.72                 | -17.25                |
| 80000.00         | -44.35                 | -17.03                |

### LEGEND

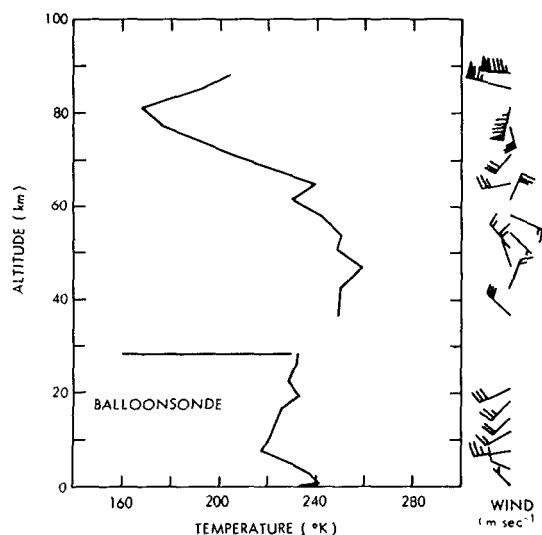
— 5 m/sec or less      ▲ 50 m/sec  
 L 10 m/sec      DIRECTION OF NORTH WIND ↓

| HEIGHT<br>meters | PRESSURE<br>nt 'sq meter | DENSITY<br>kg/cu meter | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>(%) | DENSITY<br>deviation<br>(%) |
|------------------|--------------------------|------------------------|-------------------------------|------------------------------|-----------------------------|
| 27000.00         | .1775835                 | 04                     | .2835866                      | 01-                          | 218.16                      |
| 28000.00         | .1522281                 | 04                     | .2396814                      | 01-                          | 221.26                      |
| 29000.00         | .1307799                 | 04                     | .2030591                      | 01-                          | 224.37                      |
| 30000.00         | .1125939                 | 04                     | .1724336                      | 01-                          | 227.48                      |
| 31000.00         | .9713846                 | 03                     | .1467590                      | 01-                          | 230.59                      |
| 32000.00         | .8397417                 | 03                     | .1251828                      | 01-                          | 233.70                      |
| 33000.00         | .7273700                 | 03                     | .1070080                      | 01-                          | 236.80                      |
| 34000.00         | .6312448                 | 03                     | .9166336                      | 02-                          | 239.91                      |
| 35000.00         | .5488786                 | 03                     | .7861929                      | 02-                          | 243.22                      |
| 36000.00         | .4781901                 | 03                     | .6755957                      | 02-                          | 246.58                      |
| 37000.00         | .4174022                 | 03                     | .5817753                      | 02-                          | 249.95                      |
| 38000.00         | .3250199                 | 03                     | .5020074                      | 02-                          | 253.31                      |
| 39000.00         | .3197899                 | 03                     | .4340383                      | 02-                          | 256.68                      |
| 40000.00         | .2606232                 | 03                     | .3766826                      | 02-                          | 259.54                      |
| 41000.00         | .2464646                 | 03                     | .3303479                      | 02-                          | 259.92                      |
| 42000.00         | .2165139                 | 03                     | .2897803                      | 02-                          | 260.30                      |
| 43000.00         | .1902462                 | 03                     | .2542531                      | 02-                          | 260.68                      |
| 44000.00         | .1672039                 | 03                     | .2231334                      | 02-                          | 261.06                      |
| 45000.00         | .1468955                 | 03                     | .1976126                      | 02-                          | 258.97                      |
| 46000.00         | .1289182                 | 03                     | .1749527                      | 02-                          | 256.71                      |
| 47000.00         | .1130153                 | 03                     | .1547310                      | 02-                          | 254.45                      |
| 48000.00         | .9899206                 | 02                     | .1361215                      | 02-                          | 253.35                      |
| 49000.00         | .8669656                 | 02                     | .1190269                      | 02-                          | 253.75                      |
| 50000.00         | .7590741                 | 02                     | .1041056                      | 02-                          | 254.15                      |
| 51000.00         | .6654552                 | 02                     | .9111720                      | 03-                          | 254.42                      |
| 52000.00         | .5828423                 | 02                     | .8042386                      | 03-                          | 252.47                      |
| 53000.00         | .5009806                 | 02                     | .7091953                      | 03-                          | 250.52                      |
| 54000.00         | .44577789                | 02                     | .6247937                      | 03-                          | 248.56                      |
| 55000.00         | .3892918                 | 02                     | .5493275                      | 03-                          | 246.88                      |
| 56000.00         | .3396725                 | 02                     | .4823905                      | 03-                          | 245.31                      |
| 57000.00         | .2961302                 | 02                     | .4232734                      | 03-                          | 243.72                      |
| 58000.00         | .2578761                 | 02                     | .3725572                      | 03-                          | 241.14                      |
| 59000.00         | .2241733                 | 02                     | .3287392                      | 03-                          | 237.57                      |
| 60000.00         | .1944706                 | 02                     | .2895379                      | 03-                          | 233.99                      |
| 61000.00         | .1684665                 | 02                     | .2521059                      | 03-                          | 232.80                      |
| 62000.00         | .1459994                 | 02                     | .2162707                      | 03-                          | 235.18                      |
| 63000.00         | .1267170                 | 02                     | .1858244                      | 03-                          | 237.56                      |
| 64000.00         | .1100426                 | 02                     | .1618204                      | 03-                          | 236.91                      |
| 65000.00         | .9537733                 | 01                     | .1438342                      | 03-                          | 231.01                      |
| 66000.00         | .8236915                 | 01                     | .1274641                      | 03-                          | 225.12                      |
| 67000.00         | .7087097                 | 01                     | .1122909                      | 03-                          | 219.87                      |
| 68000.00         | .6078511                 | 01                     | .3819406                      | 04-                          | 215.66                      |
| 69000.00         | .5157928                 | 01                     | .8564387                      | 04-                          | 211.44                      |
| 70000.00         | .4433087                 | 01                     | .7411733                      | 04-                          | 208.37                      |
| 71000.00         | .3773600                 | 01                     | .6370998                      | 04-                          | 206.35                      |
| 72000.00         | .3207288                 | 01                     | .5468515                      | 04-                          | 204.32                      |
| 73000.00         | .2729239                 | 01                     | .4543034                      | 04-                          | 209.29                      |
| 74000.00         | .2333644                 | 01                     | .3747802                      | 04-                          | 216.92                      |
| 75000.00         | .2006233                 | 01                     | .3114250                      | 04-                          | 224.43                      |
| 76000.00         | .1729384                 | 01                     | .2681343                      | 04-                          | 224.69                      |
| 77000.00         | .1491065                 | 01                     | .2309122                      | 04-                          | 224.96                      |
| 78000.00         | .1285424                 | 01                     | .1997602                      | 04-                          | 224.17                      |
| 79000.00         | .1127108                 | 01                     | .1737296                      | 04-                          | 222.61                      |
| 80000.00         | .9521754                 | 00                     | .1508912                      | 04-                          | 219.84                      |
| 81000.00         | .8201844                 | 00                     | .1261815                      | 04-                          | 226.45                      |
| 82000.00         | .7097098                 | 00                     | .1057844                      | 04-                          | 223.73                      |
| 83000.00         | .6155134                 | 00                     | .9177641                      | 05-                          | 223.64                      |
| 84000.00         | .5326774                 | 00                     | .8187194                      | 05-                          | 226.66                      |

# FIGURE 7

## BARROW, 10 FEBRUARY 1966, 0800 GMT.

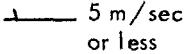
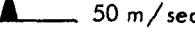
| WIND DIRECTION<br>degrees | WIND SPEED<br>m/sec | ERROR<br>m/sec ( $\pm$ ) | TEMPERATURE<br>degrees Kelvin | ERROR<br>degrees Kelvin ( $\pm$ ) | HEIGHT<br>meters |
|---------------------------|---------------------|--------------------------|-------------------------------|-----------------------------------|------------------|
| 318.14                    | 30.61               | 3.02                     | 248.72                        | 1.08                              | 36451.05         |
| 13.35                     | 15.75               | 3.81                     | 250.43                        | 1.25                              | 42451.45         |
| 356.58                    | 15.25               | 12.58                    | 259.14                        | 3.97                              | 46973.75         |
| 345.61                    | 14.91               | 10.81                    | 248.90                        | 5.86                              | 50744.15         |
| 136.99                    | 5.25                | 22.76                    | 249.82                        | 5.57                              | 54423.95         |
| 118.75                    | 14.66               | 18.52                    | 242.16                        | 4.76                              | 58013.35         |
| 22.39                     | 22.81               | 19.66                    | 230.29                        | 7.01                              | 61509.35         |
| 256.77                    | 24.64               | 25.45                    | 239.90                        | 7.59                              | 64924.29         |
| 215.06                    | 29.38               | 6.15                     | 206.91                        | 1.61                              | 70896.29         |
| 174.76                    | 25.19               | 11.08                    | 177.48                        | 2.47                              | 77199.45         |
| 198.68                    | 95.30               | 29.85                    | 168.40                        | 7.17                              | 81197.95         |
| 292.75                    | 74.07               | 34.22                    | 193.56                        | 13.32                             | 85038.30         |
| 272.31                    | 93.16               | 65.51                    | 205.78                        | 20.15                             | 88255.19         |

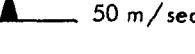


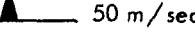
WIND COMPONENTS  
m/sec

| HEIGHT<br>meters | SOUTH<br>component (+) | WEST<br>component (+) |
|------------------|------------------------|-----------------------|
| 40000.00         | -18.38                 | 6.19                  |
| 45000.00         | -15.26                 | -1.07                 |
| 50000.00         | -14.59                 | 3.15                  |
| 55000.00         | 4.35                   | -5.06                 |
| 60000.00         | -8.94                  | -10.48                |
| 65000.00         | 5.87                   | 23.89                 |
| 70000.00         | 21.28                  | 17.94                 |
| 75000.00         | 24.72                  | 4.39                  |
| 80000.00         | 70.74                  | 20.69                 |
| 85000.00         | -27.45                 | 67.92                 |

### LEGEND

 5 m/sec  
or less
  10 m/sec

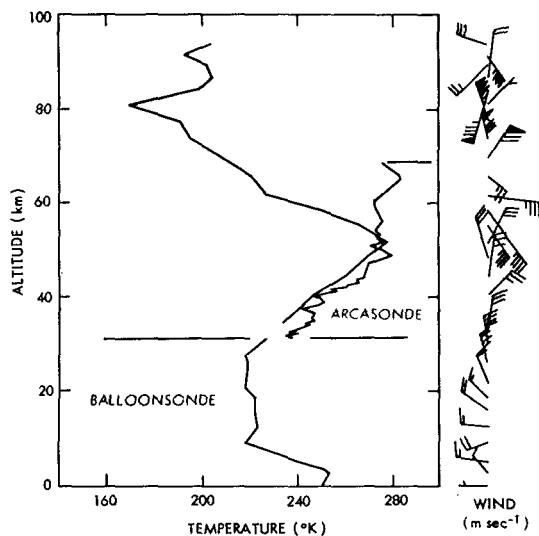
 50 m/sec

 DIRECTION OF  
NORTH WIND

| HEIGHT<br>meters | PRESSURE<br>nt/sq meter |    | DENSITY<br>kg/cu meter | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>(%) | DENSITY<br>deviation<br>(%) |
|------------------|-------------------------|----|------------------------|-------------------------------|------------------------------|-----------------------------|
| 28000.00         | .1558214                | 04 | .2331859               | 01-                           | 232.80                       | 3.58-                       |
| 29000.00         | .1347664                | 04 | .2000583               | 01-                           | 234.68                       | 3.07-                       |
| 30000.00         | .1166971                | 04 | .1718552               | 01-                           | 236.56                       | 2.51-                       |
| 31000.00         | .1011705                | 04 | .1478127               | 01-                           | 238.45                       | 1.89-                       |
| 32000.00         | .8781226                | 03 | .1272903               | 01-                           | 240.33                       | 1.23-                       |
| 33000.00         | .7630540                | 03 | .1097499               | 01-                           | 242.21                       | .55-                        |
| 34000.00         | .6638147                | 03 | .9473951               | 02-                           | 244.10                       | .06                         |
| 35000.00         | .5781260                | 03 | .8187812               | 02-                           | 245.98                       | .61                         |
| 36000.00         | .5040511                | 03 | .7084458               | 02-                           | 247.87                       | 1.10                        |
| 37000.00         | .4398373                | 03 | .6156933               | 02-                           | 248.87                       | 1.52                        |
| 38000.00         | .3839559                | 03 | .5368539               | 02-                           | 249.16                       | 1.80                        |
| 39000.00         | .3352416                | 03 | .4682047               | 02-                           | 249.44                       | 1.95                        |
| 40000.00         | .2927659                | 03 | .4084152               | 02-                           | 249.73                       | 1.95                        |
| 41000.00         | .2597215                | 03 | .3563304               | 02-                           | 250.01                       | 1.82                        |
| 42000.00         | .2234086                | 03 | .3109497               | 02-                           | 250.30                       | 1.56                        |
| 43000.00         | .1952637                | 03 | .2704954               | 02-                           | 251.49                       | 1.19                        |
| 44000.00         | .1708133                | 03 | .2348250               | 02-                           | 253.41                       | .77                         |
| 45000.00         | .1495821                | 03 | .2040870               | 02-                           | 255.24                       | .32                         |
| 46000.00         | .1311252                | 03 | .1775661               | 02-                           | 257.26                       | .16-                        |
| 47000.00         | .1150611                | 03 | .1547265               | 02-                           | 259.07                       | .68-                        |
| 48000.00         | .1009450                | 03 | .1371822               | 02-                           | 256.35                       | 1.32-                       |
| 49000.00         | .8844109                | 02 | .1214764               | 02-                           | 253.64                       | 2.09-                       |
| 50000.00         | .7777898                | 02 | .1074325               | 02-                           | 250.92                       | 3.00-                       |
| 51000.00         | .6761887                | 02 | .9461973               | 03-                           | 248.96                       | 4.02-                       |
| 52000.00         | .5906534                | 02 | .8256829               | 03-                           | 249.21                       | 5.08-                       |
| 53000.00         | .5160285                | 02 | .7206452               | 03-                           | 249.46                       | 6.09-                       |
| 54000.00         | .4509110                | 02 | .6290805               | 03-                           | 249.71                       | 7.01-                       |
| 55000.00         | .3939327                | 02 | .5520717               | 03-                           | 248.59                       | 7.85-                       |
| 56000.00         | .3438630                | 02 | .4860731               | 03-                           | 246.45                       | 8.68-                       |
| 57000.00         | .2998157                | 02 | .4275091               | 03-                           | 244.32                       | 9.53-                       |
| 58000.00         | .2611078                | 02 | .3755944               | 03-                           | 242.19                       | 10.38-                      |
| 59000.00         | .2270469                | 02 | .3312222               | 03-                           | 238.81                       | 11.29-                      |
| 60000.00         | .1970438                | 02 | .2916012               | 03-                           | 235.41                       | 12.27-                      |
| 61000.00         | .1706611                | 02 | .2562561               | 03-                           | 232.01                       | 13.33-                      |
| 62000.00         | .1476461                | 02 | .2220315               | 03-                           | 231.66                       | 14.38-                      |
| 63000.00         | .1278386                | 02 | .1899359               | 03-                           | 234.48                       | 15.20-                      |
| 64000.00         | .1108838                | 02 | .1627901               | 03-                           | 237.30                       | 15.68-                      |
| 65000.00         | .9632560                | 01 | .1401269               | 03-                           | 239.48                       | 15.84-                      |
| 66000.00         | .8359891                | 01 | .1244850               | 03-                           | 233.96                       | 15.90-                      |
| 67000.00         | .7231166                | 01 | .1102817               | 03-                           | 228.43                       | 16.04-                      |
| 68000.00         | .6232951                | 01 | .9741407               | 04-                           | 222.91                       | 16.27-                      |
| 69000.00         | .5352791                | 01 | .8578435               | 04-                           | 217.38                       | 16.61-                      |
| 70000.00         | .4573161                | 01 | .7529084               | 04-                           | 211.86                       | 17.05-                      |
| 71000.00         | .3901543                | 01 | .6584662               | 04-                           | 206.42                       | 17.60-                      |
| 72000.00         | .3311222                | 01 | .5717678               | 04-                           | 201.75                       | 18.24-                      |
| 73000.00         | .2799592                | 01 | .4948722               | 04-                           | 197.08                       | 18.95-                      |
| 74000.00         | .2357637                | 01 | .4266603               | 04-                           | 192.41                       | 19.74-                      |
| 75000.00         | .1977127                | 01 | .3668810               | 04-                           | 187.75                       | 20.60-                      |
| 76000.00         | .1650909                | 01 | .3141472               | 04-                           | 183.08                       | 21.55-                      |
| 77000.00         | .1372138                | 01 | .2679324               | 04-                           | 178.41                       | 22.58-                      |
| 78000.00         | .1136103                | 01 | .2253159               | 04-                           | 175.66                       | 23.63-                      |
| 79000.00         | .9381763                | 00 | .1885008               | 04-                           | 173.39                       | 24.59-                      |
| 80000.00         | .7728239                | 00 | .1573397               | 04-                           | 171.12                       | 25.44-                      |
| 81000.00         | .6350052                | 00 | .1310210               | 04-                           | 168.84                       | 26.33-                      |
| 82000.00         | .5225490                | 00 | .1048343               | 04-                           | 173.65                       | 27.11-                      |
| 83000.00         | .4327282                | 00 | .8365784               | 05-                           | 180.20                       | 27.42-                      |
| 84000.00         | .3607892                | 00 | .6730302               | 05-                           | 186.75                       | 27.24-                      |
| 85000.00         | .3027181                | 00 | .5455618               | 05-                           | 193.30                       | 26.61-                      |
| 86000.00         | .2552066                | 00 | .4508292               | 05-                           | 197.21                       | 25.62-                      |
| 87000.00         | .2158753                | 00 | .3741412               | 05-                           | 201.01                       | 24.37-                      |
| 88000.00         | .1831880                | 00 | .3115998               | 05-                           | 204.81                       | 22.85-                      |

FIGURE 8  
CHURCHILL, 10 FEBRUARY 1966, 1800 GMT.

| WIND DIRECTION<br>degrees | WIND SPEED<br>m/sec | ERROR<br>m/sec (±) | TEMPERATURE<br>degrees Kelvin | ERROR<br>degrees Kelvin (±) | HEIGHT<br>meters |
|---------------------------|---------------------|--------------------|-------------------------------|-----------------------------|------------------|
| 8.44                      | 31.06               | 1.59               | 233.58                        | .65                         | 34314.60         |
| 41.98                     | 27.48               | 3.71               | 246.44                        | 1.19                        | 40157.85         |
| 8.77                      | 32.05               | 3.95               | 260.56                        | 1.08                        | 44538.25         |
| 343.96                    | 28.12               | 3.22               | 269.03                        | .79                         | 48181.00         |
| 21.64                     | 27.85               | 4.10               | 277.84                        | .91                         | 51740.75         |
| 147.56                    | 33.40               | 4.60               | 265.81                        | .91                         | 55203.50         |
| 146.40                    | 43.32               | 7.18               | 248.83                        | 1.14                        | 58573.95         |
| 95.12                     | 34.94               | 10.14              | 227.41                        | 1.41                        | 61857.70         |
| 127.25                    | 26.42               | 8.76               | 221.34                        | 1.06                        | 65566.80         |
| 33.71                     | 68.53               | 7.09               | 208.19                        | .85                         | 69670.05         |
| 347.29                    | 79.19               | 5.66               | 194.93                        | .68                         | 73617.35         |
| 342.39                    | 152.86              | 12.23              | 190.73                        | 1.81                        | 77429.05         |
| 44.98                     | 1.47                | 25.72              | 168.79                        | 2.54                        | 81087.39         |
| 200.27                    | 83.21               | 33.50              | 199.31                        | 4.92                        | 84154.60         |
| 3.75                      | 22.12               | 13.87              | 204.07                        | 6.14                        | 86675.20         |
| 223.79                    | 25.83               | 52.74              | 202.49                        | 7.76                        | 89110.45         |
| 145.60                    | 112.69              | 37.33              | 192.76                        | 5.79                        | 91460.00         |
| 292.34                    | 30.41               | 29.63              | 203.95                        | 5.13                        | 93667.25         |



| WIND COMPONENTS<br>m/sec |                       |
|--------------------------|-----------------------|
| SOUTH<br>component (+)   | WEST<br>component (+) |
| -29.51                   | -6.17                 |
| -20.70                   | -18.00                |
| -31.09                   | -3.28                 |
| -26.44                   | -1.45                 |
| 25.01                    | -17.47                |
| 21.76                    | -28.67                |
| 14.02                    | -23.13                |
| -58.70                   | -33.40                |
| -102.07                  | 27.87                 |
| -44.03                   | 13.01                 |
| 44.47                    | 18.67                 |
| 46.79                    | -12.99                |

## LEGEND

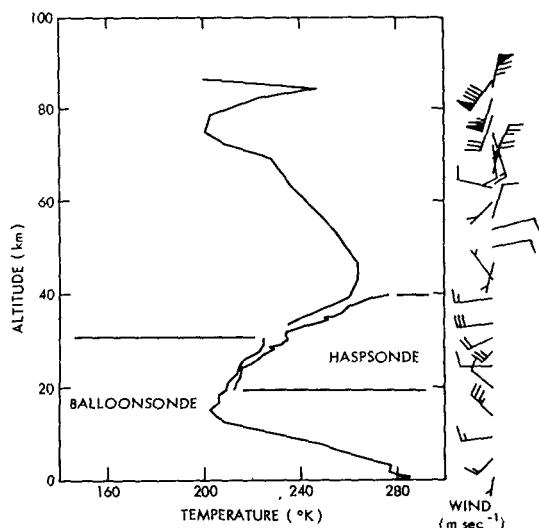
5 m/sec or less 50 m/sec  
10 m/sec DIRECTION OF NORTH WIND

| HEIGHT<br>meters | PRESSURE<br>nt/sq meter |     | DENSITY<br>kg/cu meter | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>(%) | DENSITY<br>deviation<br>(%) |
|------------------|-------------------------|-----|------------------------|-------------------------------|------------------------------|-----------------------------|
| 30000.00         | .1115605                | 04  | .1731143               | 01-                           | 224.51                       | 6.80-                       |
| 31000.00         | .9600126                | 03  | .1475882               | 01-                           | 226.61                       | 6.90-                       |
| 32000.00         | .8273058                | 03  | .1260174               | 01-                           | 228.71                       | 6.94-                       |
| 33000.00         | .7139475                | 03  | .1977599               | 01-                           | 230.81                       | 6.95-                       |
| 34000.00         | .6169737                | 03  | .9228261               | 02-                           | 232.92                       | 7.00-                       |
| 35000.00         | .5339064                | 03  | .7912105               | 02-                           | 235.08                       | 7.08-                       |
| 36000.00         | .4626621                | 03  | .6792744               | 02-                           | 237.28                       | 7.19-                       |
| 37000.00         | .4014727                | 03  | .5840219               | 02-                           | 239.48                       | 7.33-                       |
| 38000.00         | .3488435                | 03  | .5028426               | 02-                           | 241.68                       | 7.50-                       |
| 39000.00         | .3035128                | 03  | .4335537               | 02-                           | 243.88                       | 7.69-                       |
| 40000.00         | .2644144                | 03  | .3743267               | 02-                           | 246.08                       | 7.91-                       |
| 41000.00         | .2307000                | 03  | .3225829               | 02-                           | 249.15                       | 8.13-                       |
| 42000.00         | .2016374                | 03  | .2783430               | 02-                           | 252.37                       | 8.33-                       |
| 43000.00         | .1765448                | 03  | .2406303               | 02-                           | 255.60                       | 8.50-                       |
| 44000.00         | .1548389                | 03  | .2084159               | 02-                           | 258.82                       | 8.64-                       |
| 45000.00         | .1360139                | 03  | .1811116               | 02-                           | 261.63                       | 8.77-                       |
| 46000.00         | .1196338                | 03  | .1578978               | 02-                           | 263.95                       | 8.91-                       |
| 47000.00         | .1053490                | 03  | .1378304               | 02-                           | 266.28                       | 9.06-                       |
| 48000.00         | .9287607                | 02  | .1204604               | 02-                           | 268.60                       | 9.20-                       |
| 49000.00         | .8197438                | 02  | .1053607               | 02-                           | 271.05                       | 9.25-                       |
| 50000.00         | .7243681                | 02  | .9225965               | 03-                           | 273.53                       | 9.20-                       |
| 51000.00         | .6408273                | 02  | .8088743               | 03-                           | 276.00                       | 9.04-                       |
| 52000.00         | .5673718                | 02  | .7137434               | 03-                           | 276.93                       | 8.82-                       |
| 53000.00         | .5020717                | 02  | .2396192               | 03-                           | 273.46                       | 8.63-                       |
| 54000.00         | .4436104                | 02  | .5724122               | 03-                           | 269.99                       | 8.51-                       |
| 55000.00         | .3913438                | 02  | .5115510               | 03-                           | 266.51                       | 8.46-                       |
| 56000.00         | .3445779                | 02  | .4585408               | 03-                           | 261.79                       | 8.49-                       |
| 57000.00         | .3026869                | 02  | .4106989               | 03-                           | 256.76                       | 8.66-                       |
| 58000.00         | .2652172                | 02  | .3670612               | 03-                           | 251.72                       | 8.97-                       |
| 59000.00         | .2317357                | 02  | .3281148               | 03-                           | 246.05                       | 9.45-                       |
| 60000.00         | .2018040                | 02  | .2935164               | 03-                           | 239.52                       | 10.15-                      |
| 61000.00         | .1750763                | 02  | .2617711               | 03-                           | 233.00                       | 10.80-                      |
| 62000.00         | .1513175                | 02  | .2320514               | 03-                           | 227.17                       | 11.09-                      |
| 63000.00         | .1304757                | 02  | .2015405               | 03-                           | 225.54                       | 12.25-                      |
| 64000.00         | .1123885                | 02  | .1748699               | 03-                           | 223.90                       | 13.45-                      |
| 65000.00         | .9270732                | 01  | .1515780               | 03-                           | 222.27                       | 14.53-                      |
| 66000.00         | .8310628                | 01  | .1316313               | 03-                           | 219.95                       | 15.51-                      |
| 67000.00         | .7128469                | 01  | .1145773               | 03-                           | 216.74                       | 16.39-                      |
| 68000.00         | .6100796                | 01  | .9953163               | 04-                           | 213.54                       | 17.23-                      |
| 69000.00         | .5209251                | 01  | .8628195               | 04-                           | 210.33                       | 18.05-                      |
| 70000.00         | .4437346                | 01  | .7465257               | 04-                           | 207.07                       | 18.84-                      |
| 71000.00         | .3770261                | 01  | .6447565               | 04-                           | 203.72                       | 19.62-                      |
| 72000.00         | .3194959                | 01  | .5555338               | 04-                           | 200.36                       | 20.37-                      |
| 73000.00         | .2700014                | 01  | .4774791               | 04-                           | 197.00                       | 21.11-                      |
| 74000.00         | .2276133                | 01  | .4076820               | 04-                           | 194.50                       | 21.83-                      |
| 75000.00         | .1915867                | 01  | .3451077               | 04-                           | 193.40                       | 22.51-                      |
| 76000.00         | .1611123                | 01  | .2918755               | 04-                           | 192.30                       | 23.07-                      |
| 77000.00         | .1353580                | 01  | .2466303               | 04-                           | 191.20                       | 23.44-                      |
| 78000.00         | .1134649                | 01  | .2110407               | 04-                           | 187.30                       | 23.63-                      |
| 79000.00         | .9466802                | 00  | .1819034               | 04-                           | 181.30                       | 23.73-                      |
| 80000.00         | .7850983                | 00  | .1560163               | 04-                           | 175.31                       | 23.91-                      |
| 81000.00         | .6469062                | 00  | .1331080               | 04-                           | 169.31                       | 24.26-                      |
| 82000.00         | .5338214                | 00  | .1045555               | 04-                           | 177.87                       | 24.95-                      |
| 83000.00         | .4448307                | 00  | .8250984               | 05-                           | 187.82                       | 25.53-                      |
| 84000.00         | .3742022                | 00  | .6591707               | 05-                           | 197.77                       | 25.39-                      |
| 85000.00         | .3166063                | 00  | .5490107               | 05-                           | 200.90                       | 26.34-                      |
| 86000.00         | .2684474                | 00  | .4611653               | 05-                           | 202.79                       | 27.76-                      |
| 87000.00         | .2278987                | 00  | .3894625               | 05-                           | 203.86                       | 20.15-                      |
| 88000.00         | .1935167                | 00  | .3317625               | 05-                           | 203.21                       | 18.50-                      |
| 89000.00         | .1642441                | 00  | .2824802               | 05-                           | 202.56                       | 17.54-                      |
| 90000.00         | .1391553                | 00  | .2438520               | 05-                           | 198.80                       | 16.86-                      |
| 91000.00         | .1175134                | 00  | .2103083               | 05-                           | 194.66                       | 15.34-                      |
| 92000.00         | .9910098                | 01- | .1766008               | 05-                           | 195.49                       | 14.21-                      |
| 93000.00         | .8378963                | 01- | .1455407               | 05-                           | 200.56                       | 13.44-                      |
|                  |                         |     |                        |                               |                              | 12.69-                      |

# FIGURE 9

## WALLOPS ISLAND, 10 FEB. 1966, 1841 GMT.

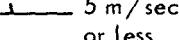
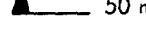
| WIND DIRECTION<br>degrees | WIND SPEED<br>m/sec | ERROR<br>m/sec ( $\pm$ ) | TEMPERATURE<br>degrees Kelvin | ERROR<br>degrees Kelvin ( $\pm$ ) | HEIGHT<br>meters |
|---------------------------|---------------------|--------------------------|-------------------------------|-----------------------------------|------------------|
| 262.90                    | 30.33               | .72                      | 234.94                        | .41                               | 33371.40         |
| 264.27                    | 17.40               | 1.14                     | 259.67                        | .69                               | 38916.55         |
| 326.12                    | 2.97                | 1.48                     | 264.20                        | 1.02                              | 43065.19         |
| 193.16                    | 2.73                | 2.81                     | 263.72                        | .99                               | 46525.90         |
| 83.09                     | 9.68                | 1.48                     | 258.93                        | .98                               | 49893.85         |
| 75.30                     | 10.01               | 1.79                     | 254.45                        | 1.09                              | 53170.25         |
| 12.94                     | 8.87                | 3.34                     | 248.82                        | 1.09                              | 56459.04         |
| 233.81                    | 4.02                | 3.55                     | 243.39                        | 1.10                              | 59663.65         |
| 291.25                    | 8.80                | 2.89                     | 236.74                        | 1.37                              | 62809.75         |
| 8.42                      | 18.61               | 5.34                     | 232.59                        | 1.48                              | 66054.15         |
| 23.02                     | 27.14               | 4.62                     | 228.31                        | 1.45                              | 69171.60         |
| 172.67                    | 10.26               | 6.18                     | 208.79                        | 1.45                              | 72117.95         |
| 160.05                    | 12.71               | 6.53                     | 201.37                        | 1.42                              | 74894.35         |
| 198.94                    | 28.44               | 3.13                     | 202.81                        | .73                               | 78634.64         |
| 194.37                    | 63.82               | 5.77                     | 224.09                        | 1.59                              | 82187.99         |
| 7.23                      | 75.82               | 7.29                     | 246.64                        | 2.62                              | 84395.99         |
| 202.44                    | 88.00               | 9.73                     | 200.19                        | 2.42                              | 86466.19         |



WIND COMPONENTS  
m/sec

| HEIGHT<br>meters | SOUTH<br>component (+) | WEST<br>component (+) |
|------------------|------------------------|-----------------------|
| 35000.00         | 3.15                   | 26.34                 |
| 40000.00         | .64                    | 13.22                 |
| 45000.00         | .39                    | 1.07                  |
| 50000.00         | -1.20                  | -9.61                 |
| 55000.00         | -5.93                  | -5.40                 |
| 60000.00         | 1.78                   | 3.77                  |
| 65000.00         | -13.46                 | .82                   |
| 70000.00         | -15.09                 | -7.99                 |
| 75000.00         | 12.36                  | -3.95                 |
| 80000.00         | 40.32                  | 11.76                 |
| 85000.00         | -29.53                 | 3.04                  |

### LEGEND

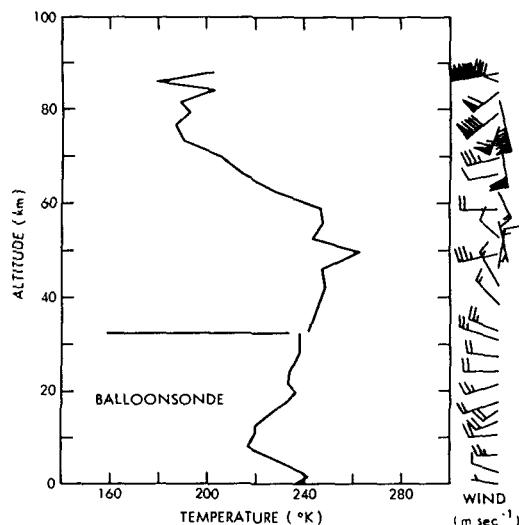
 5 m/sec  
or less  
 50 m/sec  
 10 m/sec  
DIRECTION OF  
NORTH WIND ↓

| HEIGHT<br>meters | PRESSURE<br>nt/sq meter |    | DENSITY<br>kg/cu meter | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation | DENSITY<br>deviation<br>(%) |
|------------------|-------------------------|----|------------------------|-------------------------------|-----------------------|-----------------------------|
| 29000.00         | .1333484                | 04 | .2064639               | 01-                           | 225.01                | 4.09-                       |
| 30000.00         | .1148218                | 04 | .1760020               | 01-                           | 227.28                | 4.07-                       |
| 31000.00         | .9902088                | 03 | .1502799               | 01-                           | 229.55                | 3.98-                       |
| 32000.00         | .8552292                | 03 | .1285226               | 01-                           | 231.82                | 3.80-                       |
| 33000.00         | .7397389                | 03 | .1100881               | 01-                           | 230.09                | 3.59-                       |
| 34000.00         | .6410374                | 03 | .9393569               | 02-                           | 237.74                | 3.33-                       |
| 35000.00         | .5568748                | 03 | .8010000               | 02-                           | 242.20                | 3.08-                       |
| 36000.00         | .4850269                | 03 | .6850399               | 02-                           | 246.66                | 2.70-                       |
| 37000.00         | .4235178                | 03 | .5875363               | 02-                           | 251.12                | 2.24-                       |
| 38000.00         | .3707015                | 02 | .5052957               | 02-                           | 255.58                | 1.70-                       |
| 39000.00         | .3252136                | 03 | .4761606               | 02-                           | 259.76                | 1.09-                       |
| 40000.00         | .2856982                | 03 | .3815634               | 02-                           | 260.85                | .50-                        |
| 41000.00         | .2511299                | 03 | .3340001               | 02-                           | 261.94                | .00-                        |
| 42000.00         | .2208712                | 03 | .2925391               | 02-                           | 263.03                | .41                         |
| 43000.00         | .1943693                | 03 | .2563755               | 02-                           | 264.12                | .73                         |
| 44000.00         | .1710926                | 03 | .2257233               | 02-                           | 264.06                | .94                         |
| 45000.00         | .1506051                | 03 | .1987984               | 02-                           | 263.92                | 1.00                        |
| 46000.00         | .1325565                | 03 | .1750796               | 02-                           | 263.78                | .93                         |
| 47000.00         | .1166693                | 03 | .1545213               | 02-                           | 263.04                | .70                         |
| 48000.00         | .1026283                | 03 | .1366628               | 02-                           | 261.62                | .32                         |
| 49000.00         | .9021782                | 02 | .1207923               | 02-                           | 260.20                | .13-                        |
| 50000.00         | .7925546                | 02 | .1066950               | 02-                           | 258.78                | .65-                        |
| 51000.00         | .6957935                | 02 | .9416727               | 03-                           | 257.41                | 1.24-                       |
| 52000.00         | .6104460                | 02 | .8305849               | 03-                           | 256.04                | 1.90-                       |
| 53000.00         | .5352136                | 02 | .7321389               | 03-                           | 254.67                | 2.60-                       |
| 54000.00         | .4689050                | 02 | .6456192               | 03-                           | 253.02                | 3.30-                       |
| 55000.00         | .4104667                | 02 | .5690010               | 03-                           | 251.31                | 3.98-                       |
| 56000.00         | .3590001                | 02 | .5010642               | 03-                           | 249.60                | 4.66-                       |
| 57000.00         | .3137116                | 02 | .4408610               | 03-                           | 247.90                | 5.33-                       |
| 58000.00         | .2738935                | 02 | .3875572               | 03-                           | 246.21                | 5.98-                       |
| 59000.00         | .2389152                | 02 | .3404094               | 03-                           | 244.51                | 6.65-                       |
| 60000.00         | .2082064                | 02 | .2989003               | 03-                           | 242.67                | 7.30-                       |
| 61000.00         | .1812485                | 02 | .2624846               | 03-                           | 240.56                | 7.95-                       |
| 62000.00         | .1575951                | 02 | .2302515               | 03-                           | 238.45                | 8.61-                       |
| 63000.00         | .1368705                | 02 | .2016245               | 03-                           | 236.49                | 9.20-                       |
| 64000.00         | .1187618                | 02 | .1759003               | 03-                           | 235.21                | 9.69-                       |
| 65000.00         | .1029738                | 02 | .1533507               | 03-                           | 233.93                | 10.03-                      |
| 66000.00         | .8221873                | 01 | .1335073               | 03-                           | 232.65                | 10.24-                      |
| 67000.00         | .7724126                | 01 | .1163466               | 03-                           | 231.28                | 10.32-                      |
| 68000.00         | .6681746                | 01 | .1012469               | 03-                           | 229.91                | 10.25-                      |
| 69000.00         | .5775273                | 01 | .8803737               | 04-                           | 228.54                | 10.03-                      |
| 70000.00         | .4980542                | 01 | .7787265               | 04-                           | 222.81                | 9.78-                       |
| 71000.00         | .42777515               | 01 | .6892965               | 04-                           | 216.19                | 9.66-                       |
| 72000.00         | .3656546                | 01 | .6078545               | 04-                           | 209.56                | 9.71-                       |
| 73000.00         | .3114426                | 01 | .5256046               | 04-                           | 206.43                | 9.84-                       |
| 74000.00         | .2646792                | 01 | .4525425               | 04-                           | 203.76                | 9.89-                       |
| 75000.00         | .2244958                | 01 | .3883150               | 04-                           | 201.41                | 9.85-                       |
| 76000.00         | .1902712                | 01 | .3284893               | 04-                           | 201.79                | 9.58-                       |
| 77000.00         | .1613231                | 01 | .2779833               | 04-                           | 202.17                | 8.98-                       |
| 78000.00         | .1368287                | 01 | .2353288               | 04-                           | 202.56                | 8.02-                       |
| 79000.00         | .1161912                | 01 | .1974635               | 04-                           | 204.99                | 6.61-                       |
| 80000.00         | .9899755                | 00 | .1634665               | 04-                           | 210.98                | 4.49-                       |
| 81000.00         | .8473128                | 00 | .1360471               | 04-                           | 216.97                | 1.70-                       |
| 82000.00         | .7283231                | 00 | .1137999               | 04-                           | 222.96                | 1.59                        |
| 83000.00         | .6292780                | 00 | .9433995               | 05-                           | 232.38                | 5.54                        |
| 84000.00         | .5470188                | 00 | .7855648               | 05-                           | 242.59                | 10.30                       |
| 85000.00         | .4756326                | 00 | .7109117               | 05-                           | 233.08                | 15.30                       |
| 86000.00         | .4093949                | 00 | .6770791               | 05-                           | 210.65                | 19.31                       |
|                  |                         |    |                        |                               |                       | 2.32                        |

# FIGURE 10

## BARROW, 10 FEBRUARY 1966, 2130 GMT.

| WIND DIRECTION<br>degrees | WIND SPEED<br>m/sec | ERROR<br>m/sec ( $\pm$ ) | TEMPERATURE<br>degrees Kelvin | ERROR<br>degrees Kelvin ( $\pm$ ) | HEIGHT<br>meters |
|---------------------------|---------------------|--------------------------|-------------------------------|-----------------------------------|------------------|
| 299.42                    | 24.79               | 1.66                     | 242.46                        | .61                               | 32966.80         |
| 319.24                    | 15.66               | 3.70                     | 245.68                        | 1.25                              | 38465.55         |
| 332.90                    | 12.93               | 6.60                     | 249.23                        | 2.19                              | 42584.90         |
| 5.05                      | 14.68               | 8.45                     | 248.14                        | 2.50                              | 46004.85         |
| 258.04                    | 33.21               | 10.60                    | 262.61                        | 3.48                              | 49338.45         |
| 317.90                    | 9.73                | 3.43                     | 243.81                        | 4.72                              | 52576.95         |
| 175.62                    | 5.11                | 21.51                    | 247.55                        | 5.32                              | 55725.85         |
| 268.68                    | 20.66               | 13.54                    | 246.33                        | 4.45                              | 58795.35         |
| 157.36                    | 15.60               | 25.79                    | 228.86                        | 6.18                              | 62243.20         |
| 249.52                    | 9.89                | 31.02                    | 214.70                        | 9.04                              | 66046.05         |
| 238.32                    | 34.46               | 35.31                    | 205.98                        | 10.06                             | 69695.45         |
| 176.44                    | 59.93               | 40.40                    | 190.50                        | 9.79                              | 73201.54         |
| 204.46                    | 66.33               | 36.77                    | 187.30                        | 9.18                              | 76563.14         |
| 245.12                    | 89.00               | 101.71                   | 192.85                        | 13.38                             | 79348.34         |
| 175.44                    | 92.82               | 60.66                    | 189.46                        | 15.84                             | 81633.74         |
| 242.77                    | 100.53              | 55.86                    | 203.62                        | 15.31                             | 83850.30         |
| 297.29                    | 39.42               | 1.78                     | 178.70                        | 15.26                             | 85956.39         |
| 262.70                    | 187.60              | 109.45                   | 202.70                        | 33.54                             | 87938.39         |



WIND COMPONENTS  
m/sec

| HEIGHT<br>meters | SOUTH<br>component (+) | WEST<br>component (+) |
|------------------|------------------------|-----------------------|
| 35000.00         | -12.05                 | 17.38                 |
| 40000.00         | -11.73                 | 8.61                  |
| 45000.00         | -13.70                 | .81                   |
| 50000.00         | 4.00                   | 27.18                 |
| 55000.00         | 2.25                   | 1.20                  |
| 60000.00         | 5.34                   | 11.34                 |
| 65000.00         | 6.46                   | 5.06                  |
| 70000.00         | 21.72                  | 26.45                 |
| 75000.00         | 60.11                  | 12.96                 |
| 80000.00         | 53.15                  | 55.61                 |
| 85000.00         | 11.02                  | 59.71                 |

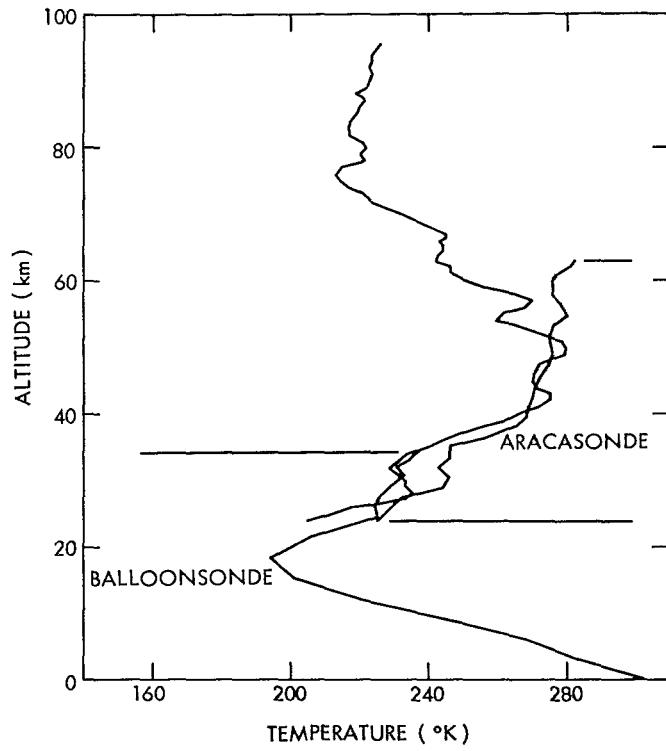
### LEGEND

— 5 m/sec      ▲ 50 m/sec  
or less

— 10 m/sec      DIRECTION OF  
NORTH WIND ↓

| HEIGHT<br>meters | PRESSURE<br>nt/sq meter | DENSITY<br>kg/cu meter | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>(%) | DENSITY<br>deviation<br>(%) |
|------------------|-------------------------|------------------------|-------------------------------|------------------------------|-----------------------------|
| 28000.00         | .1609383                | 04                     | .2357694                      | 01-                          | 237.81                      |
| 29000.00         | .1795774                | 04                     | .2036738                      | 01-                          | 238.74                      |
| 30000.00         | .1211246                | 04                     | .1760562                      | 01-                          | 239.68                      |
| 31000.00         | .1051741                | 04                     | .1522766                      | 01-                          | 240.62                      |
| 32000.00         | .9137836                | 03                     | .1317891                      | 01-                          | 241.55                      |
| 33000.00         | .7343856                | 03                     | .1141318                      | 01-                          | 242.48                      |
| 34000.00         | .6009203                | 03                     | .9902795                      | 02-                          | 243.06                      |
| 35000.00         | .6011584                | 03                     | .8595589                      | 02-                          | 243.65                      |
| 36000.00         | .5232550                | 03                     | .7463792                      | 02-                          | 244.23                      |
| 37000.00         | .4556177                | 03                     | .6483485                      | 02-                          | 244.82                      |
| 38000.00         | .3968712                | 03                     | .5634065                      | 02-                          | 245.40                      |
| 39000.00         | .3458418                | 03                     | .4835024                      | 02-                          | 246.13                      |
| 40000.00         | .3015209                | 03                     | .4252814                      | 02-                          | 247.00                      |
| 41000.00         | .2630169                | 03                     | .3696830                      | 02-                          | 247.86                      |
| 42000.00         | .2295484                | 03                     | .3215231                      | 02-                          | 248.72                      |
| 43000.00         | .2004149                | 03                     | .2802970                      | 02-                          | 249.09                      |
| 44000.00         | .1749880                | 03                     | .2450481                      | 02-                          | 248.78                      |
| 45000.00         | .1527674                | 03                     | .2142047                      | 02-                          | 248.46                      |
| 46000.00         | .1333509                | 03                     | .1872131                      | 02-                          | 248.14                      |
| 47000.00         | .1165334                | 03                     | .1608098                      | 02-                          | 252.46                      |
| 48000.00         | .1020747                | 03                     | .1384769                      | 02-                          | 256.80                      |
| 49000.00         | .8961234                | 02                     | .1195495                      | 02-                          | 261.14                      |
| 50000.00         | .7871359                | 02                     | .1059724                      | 02-                          | 258.77                      |
| 51000.00         | .6892975                | 02                     | .9502672                      | 03-                          | 252.36                      |
| 52000.00         | .6030248                | 02                     | .8499976                      | 03-                          | 247.15                      |
| 53000.00         | .5257910                | 02                     | .7437704                      | 03-                          | 244.31                      |
| 54000.00         | .4582567                | 02                     | .6503071                      | 03-                          | 245.40                      |
| 55000.00         | .3996787                | 02                     | .5644499                      | 03-                          | 246.68                      |
| 56000.00         | .3487906                | 02                     | .4910834                      | 03-                          | 247.43                      |
| 57000.00         | .3044240                | 02                     | .4293046                      | 03-                          | 247.04                      |
| 58000.00         | .2656537                | 02                     | .3752320                      | 03-                          | 246.64                      |
| 59000.00         | .2317192                | 02                     | .3291042                      | 03-                          | 245.29                      |
| 60000.00         | .2017624                | 02                     | .2926017                      | 03-                          | 240.22                      |
| 61000.00         | .1751683                | 02                     | .2595080                      | 03-                          | 235.15                      |
| 62000.00         | .1516189                | 02                     | .2295666                      | 03-                          | 230.09                      |
| 63000.00         | .1308635                | 02                     | .2016905                      | 03-                          | 226.04                      |
| 64000.00         | .1126668                | 02                     | .1765528                      | 03-                          | 222.32                      |
| 65000.00         | .9675996                | 01                     | .1542084                      | 03-                          | 218.59                      |
| 66000.00         | .8288595                | 01                     | .1343857                      | 03-                          | 214.87                      |
| 67000.00         | .7084630                | 01                     | .1161205                      | 03-                          | 212.42                      |
| 68000.00         | .6044967                | 01                     | .1002674                      | 03-                          | 210.03                      |
| 69000.00         | .5148775                | 01                     | .8638498                      | 04-                          | 207.64                      |
| 70000.00         | .4376463                | 01                     | .7450636                      | 04-                          | 204.64                      |
| 71000.00         | .3709107                | 01                     | .6453747                      | 04-                          | 200.22                      |
| 72000.00         | .3132100                | 01                     | .5572677                      | 04-                          | 195.80                      |
| 73000.00         | .2624915                | 01                     | .4795063                      | 04-                          | 191.30                      |
| 74000.00         | .2210526                | 01                     | .4058770                      | 04-                          | 189.74                      |
| 75000.00         | .1852423                | 01                     | .3418441                      | 04-                          | 188.78                      |
| 76000.00         | .1551028                | 01                     | .2876787                      | 04-                          | 187.83                      |
| 77000.00         | .1298366                | 01                     | .2403873                      | 04-                          | 186.16                      |
| 78000.00         | .1088111                | 01                     | .1993447                      | 04-                          | 180.16                      |
| 79000.00         | .0136374                | 00                     | .1656419                      | 04-                          | 192.15                      |
| 80000.00         | .7677804                | 00                     | .1393959                      | 04-                          | 191.88                      |
| 81000.00         | .6447302                | 00                     | .1179683                      | 04-                          | 190.40                      |
| 82000.00         | .5414090                | 00                     | .9834124                      | 05-                          | 191.70                      |
| 83000.00         | .4562510                | 00                     | .8020240                      | 05-                          | 198.18                      |
| 84000.00         | .3861674                | 00                     | .6665192                      | 05-                          | 201.84                      |
| 85000.00         | .3257163                | 00                     | .5971846                      | 05-                          | 190.01                      |
| 86000.00         | .2718245                | 00                     | .5285971                      | 05-                          | 179.22                      |
| 87000.00         | .2271224                | 00                     | .4135383                      | 05-                          | 191.33                      |

FIGURE 11  
ASCENSION, 27 FEBRUARY 1966, 1652 GMT.

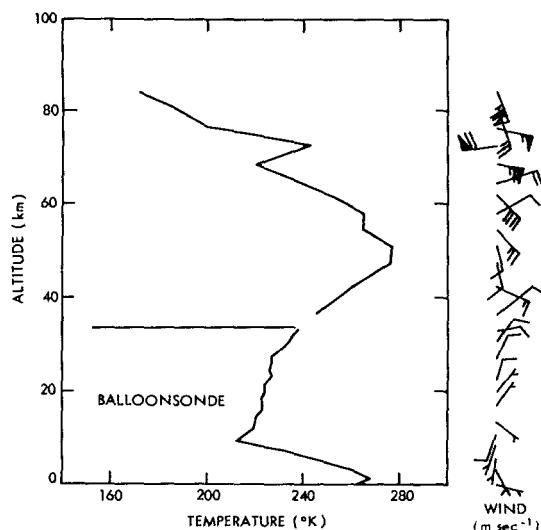


| HEIGHT<br>meters | PRESSURE<br>nt/sq meter | DENSITY<br>kg/cu meter | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>(%) | DENSITY<br>deviation<br>(%) |       |       |
|------------------|-------------------------|------------------------|-------------------------------|------------------------------|-----------------------------|-------|-------|
| 24000.00         | .2366431                | .04                    | .4860000                      | 01-                          | 205.10                      | 3.54- | 3.54  |
| 25000.00         | .2426467                | .04                    | .4020000                      | 01-                          | 210.80                      | 4.81- | .28   |
| 26000.00         | .2066497                | .04                    | .3320000                      | 01-                          | 218.00                      | 5.57- | 3.08- |
| 27000.00         | .1786520                | .04                    | .2709999                      | 01-                          | 229.80                      | 4.97- | 7.50- |
| 28000.00         | .1533207                | .04                    | .2280000                      | 01-                          | 235.40                      | 5.13- | 9.07- |
| 29000.00         | .1333224                | .04                    | .2000000                      | 01-                          | 233.10                      | 4.11- | 6.88- |
| 30000.00         | .1159905                | .04                    | .1730000                      | 01-                          | 232.70                      | 3.10- | 6.03- |
| 31000.00         | .9999180                | .03                    | .1500000                      | 01-                          | 230.50                      | 3.03- | 5.01- |
| 32000.00         | .8639291                | .03                    | .1310000                      | 01-                          | 229.30                      | 2.82- | 3.35- |
| 33000.00         | .7466054                | .03                    | .1120000                      | 01-                          | 231.19                      | 2.59- | 3.22- |
| 34000.00         | .6430471                | .03                    | .9600000                      | 02-                          | 233.60                      | 2.93- | 2.80- |
| 35000.00         | .5572875                | .03                    | .8130000                      | 02-                          | 238.60                      | 3.01- | 3.92- |
| 36000.00         | .4826270                | .03                    | .6940000                      | 02-                          | 242.80                      | 3.13- | 4.24- |
| 37000.00         | .4212987                | .03                    | .5900000                      | 02-                          | 248.60                      | 2.75- | 5.22- |
| 38000.00         | .3670627                | .03                    | .5040000                      | 02-                          | 255.10                      | 2.43- | 5.89- |
| 39000.00         | .3239733                | .03                    | .4310000                      | 02-                          | 261.90                      | 1.47- | 6.63- |
| 40000.00         | .2839766                | .03                    | .3730000                      | 02-                          | 266.00                      | 1.10- | 6.65- |
| 41000.00         | .2506461                | .03                    | .3220000                      | 02-                          | 271.80                      | .19-  | 6.83- |
| 42000.00         | .2213151                | .03                    | .2819999                      | 02-                          | 274.19                      | .61   | 5.83- |
| 43000.00         | .1973171                | .03                    | .2490000                      | 02-                          | 274.90                      | 2.26  | 4.19- |
| 44000.00         | .1733191                | .03                    | .2230000                      | 02-                          | 270.70                      | 2.25  | 1.28- |
| 45000.00         | .1533207                | .03                    | .1980000                      | 02-                          | 270.00                      | 2.83  | .69   |
| 46000.00         | .1346556                | .03                    | .1740000                      | 02-                          | 270.19                      | 2.52  | 1.51  |
| 47000.00         | .1193235                | .03                    | .1530000                      | 02-                          | 271.30                      | 2.99  | 2.23  |
| 48000.00         | .1054580                | .03                    | .1340000                      | 02-                          | 273.50                      | 3.09  | 1.77  |
| 49000.00         | .9332567                | .02                    | .1170000                      | 02-                          | 279.00                      | 3.30  | .62   |
| 50000.00         | .8265987                | .02                    | .1030000                      | 02-                          | 279.30                      | 3.61  | .30   |
| 51000.00         | .7346063                | .02                    | .9189998                      | 03-                          | 278.10                      | 4.26  | 1.33  |
| 52000.00         | .6492799                | .02                    | .8279999                      | 03-                          | 273.30                      | 4.33  | 3.37  |
| 53000.00         | .5746194                | .02                    | .7499998                      | 03-                          | 266.30                      | 4.56  | 5.59  |
| 54000.00         | .5039585                | .02                    | .6769999                      | 03-                          | 259.60                      | 3.92  | 7.22  |
| 55000.00         | .4439634                | .02                    | .5909999                      | 03-                          | 261.60                      | 3.84  | 5.39  |
| 56000.00         | .3906345                | .02                    | .5079999                      | 03-                          | 267.60                      | 3.73  | 2.08  |
| 57000.00         | .3453050                | .02                    | .4449999                      | 03-                          | 269.69                      | 4.19  | .85   |
| 58000.00         | .3053082                | .02                    | .4009999                      | 03-                          | 264.30                      | 4.78  | 2.59  |
| 59000.00         | .2679780                | .02                    | .3630000                      | 03-                          | 256.50                      | 4.70  | 4.93  |
| 60000.00         | .2333142                | .02                    | .3260000                      | 03-                          | 250.00                      | 3.87  | 6.56  |
| 61000.00         | .2039832                | .02                    | .2900000                      | 03-                          | 246.10                      | 3.58  | 7.29  |
| 62000.00         | .1786520                | .02                    | .2530000                      | 03-                          | 245.70                      | 3.59  | 5.72  |
| 63000.00         | .1559872                | .02                    | .2240000                      | 03-                          | 241.90                      | 3.47  | 5.40  |
| 64000.00         | .1359888                | .02                    | .1940000                      | 03-                          | 243.10                      | 3.41  | 2.98  |
| 65000.00         | .1181236                | .02                    | .1690000                      | 03-                          | 243.80                      | 3.19  | 1.41  |
| 66000.00         | .1027915                | .02                    | .1480000                      | 03-                          | 242.80                      | 3.40  | .59   |
| 67000.00         | .8972595                | .01                    | .1280000                      | 03-                          | 244.80                      | 4.17  | 1.26- |
| 68000.00         | .7812691                | .01                    | .1130000                      | 03-                          | 240.50                      | 4.94  | .86-  |
| 69000.00         | .6786109                | .01                    | .9999999                      | 04-                          | 236.60                      | 5.71  | .00   |
| 70000.00         | .5892849                | .01                    | .8849999                      | 04-                          | 231.90                      | 6.74  | 1.10  |
| 71000.00         | .5092914                | .01                    | .7819999                      | 04-                          | 226.60                      | 7.55  | 2.29  |
| 72000.00         | .4386306                | .01                    | .6859999                      | 04-                          | 222.80                      | 8.30  | 3.01  |
| 73000.00         | .3773023                | .01                    | .5970700                      | 04-                          | 220.00                      | 9.22  | 3.17  |
| 74000.00         | .3239734                | .01                    | .5219999                      | 04-                          | 216.00                      | 10.28 | 4.08  |
| 75000.00         | .2773105                | .01                    | .4510000                      | 04-                          | 214.10                      | 11.35 | 4.03  |
| 76000.00         | .2373138                | .01                    | .3870000                      | 04-                          | 213.10                      | 12.76 | 3.58  |
| 77000.00         | .2026500                | .01                    | .3290000                      | 04-                          | 214.89                      | 14.33 | 2.49  |
| 78000.00         | .1746523                | .01                    | .2740000                      | 04-                          | 220.90                      | 17.39 | .36-  |
| 79000.00         | .1493211                | .01                    | .2360000                      | 04-                          | 220.20                      | 20.01 | .46   |
| 80000.00         | .1286561                | .01                    | .2020000                      | 04-                          | 221.70                      | 24.11 | 1.05  |
| 81000.00         | .1105242                | .01                    | .1750000                      | 04-                          | 219.50                      | 28.21 | 5.29  |
| 82000.00         | .9492553                | .00                    | .1520000                      | 04-                          | 217.40                      | 32.41 | 9.98  |
| 83000.00         | .8132665                | .00                    | .1310000                      | 04-                          | 216.50                      | 36.39 | 13.91 |
| 84000.00         | .6986092                | .00                    | .1120000                      | 04-                          | 216.90                      | 40.87 | 17.11 |
| 85000.00         | .5999506                | .00                    | .9549999                      | 05-                          | 218.69                      | 45.44 | 20.05 |
| 86000.00         | .5146243                | .00                    | .8159999                      | 05-                          | 219.80                      | 49.97 | 23.31 |
| 87000.00         | .4426302                | .00                    | .6969999                      | 05-                          | 221.20                      | 55.07 | 26.63 |
| 88000.00         | .3799687                | .00                    | .6049999                      | 05-                          | 219.19                      | 60.01 | 32.12 |
| 89000.00         | .3266398                | .00                    | .5139999                      | 05-                          | 222.00                      | 65.33 | 34.90 |
| 90000.00         | .2826434                | .00                    | .4419999                      | 05-                          | 222.40                      | 71.94 | 39.43 |
| 91000.00         | .2426467                | .00                    | .3790000                      | 05-                          | 223.69                      | 77.14 | 45.88 |
| 92000.00         | .2106493                | .00                    | .3270000                      | 05-                          | 222.80                      | 83.99 | 53.01 |
| 93000.00         | .1799852                | .00                    | .2810000                      | 05-                          | 223.80                      | 87.53 | 59.38 |
| 94000.00         | .1559871                | .00                    | .2420000                      | 05-                          | 223.80                      | 93.33 | 65.86 |
| 95000.00         | .1346556                | .00                    | .2080000                      | 05-                          | 225.00                      | 97.98 | 71.75 |

# FIGURE 12

## BARROW, 1 MAY 1966, 2210 GMT.

| WIND DIRECTION<br>degrees | WIND SPEED<br>m/sec | ERROR<br>m/sec ( $\pm$ ) | TEMPERATURE<br>degrees Kelvin | ERROR<br>degrees Kelvin ( $\pm$ ) | HEIGHT<br>meters |
|---------------------------|---------------------|--------------------------|-------------------------------|-----------------------------------|------------------|
| 57.68                     | 10.76               | 3.68                     | 244.94                        | .94                               | 36785.50         |
| 118.65                    | 12.75               | 7.78                     | 261.46                        | 1.64                              | 42743.90         |
| 163.39                    | 9.44                | 18.48                    | 276.23                        | 3.82                              | 47198.55         |
| 162.72                    | 10.79               | 24.97                    | 276.82                        | 5.06                              | 50899.05         |
| 135.93                    | 23.85               | 21.12                    | 254.63                        | 4.30                              | 54505.40         |
| 60.58                     | 12.20               | 9.16                     | 265.46                        | 2.37                              | 58003.40         |
| 133.69                    | 38.13               | 12.17                    | 252.39                        | 2.57                              | 61401.30         |
| 78.38                     | 17.99               | 34.48                    | 238.70                        | 6.46                              | 64705.25         |
| 97.61                     | 66.02               | 27.48                    | 219.98                        | 5.10                              | 68426.15         |
| 253.51                    | 69.72               | 23.63                    | 242.61                        | 4.51                              | 72549.15         |
| 103.72                    | 53.78               | 73.78                    | 200.22                        | 11.81                             | 76507.20         |
| 173.84                    | 27.39               | 86.20                    | 186.73                        | 12.44                             | 80331.24         |
| 170.95                    | 77.43               | 38.20                    | 172.17                        | 7.19                              | 84000.94         |



WIND COMPONENTS  
m/sec

| HEIGHT<br>meters | SOUTH<br>component (+) | WEST<br>component (+) |
|------------------|------------------------|-----------------------|
| 40000.00         | .64                    | -10.22                |
| 45000.00         | 7.59                   | -6.88                 |
| 50000.00         | 9.99                   | -3.08                 |
| 55000.00         | 13.86                  | -15.74                |
| 60000.00         | 13.00                  | -20.58                |
| 65000.00         | -2.64                  | -21.41                |
| 70000.00         | 12.96                  | -14.93                |
| 75000.00         | 15.43                  | -6.89                 |
| 80000.00         | 25.98                  | -7.20                 |

### LEGEND

— 5 m/sec      ▲ 50 m/sec  
or less

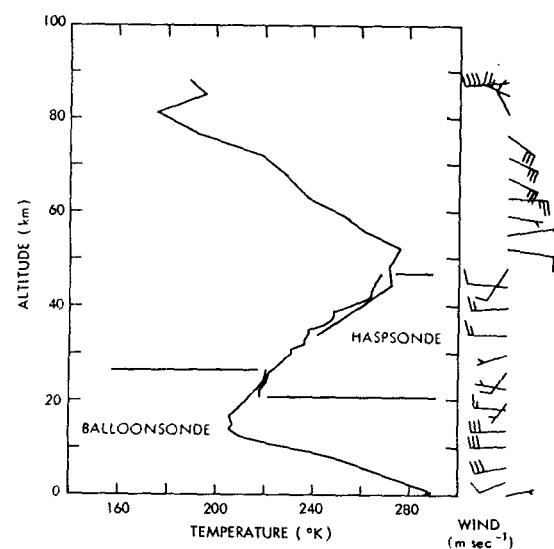
— 10 m/sec      DIRECTION OF  
NORTH WIND ↓

| HEIGHT<br>meters | PRESSURE<br>nt/sq meter |    | DENSITY<br>kg/cu meter | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>(%) | DENSITY<br>deviation<br>(%) |
|------------------|-------------------------|----|------------------------|-------------------------------|------------------------------|-----------------------------|
| 32000.00         | .9177849                | 03 | .1353461               | 01-                           | 236.24                       | .15-                        |
| 33000.00         | .7955715                | 03 | .1164268               | 01-                           | 238.05                       | .60                         |
| 34000.00         | .6904133                | 03 | .1002714               | 01-                           | 239.87                       | 1.41                        |
| 35000.00         | .5998234                | 03 | .8645903               | 02-                           | 241.69                       | 2.15                        |
| 36000.00         | .5216923                | 03 | .7463544               | 02-                           | 243.51                       | 2.83                        |
| 37000.00         | .4542557                | 03 | .6445216               | 02-                           | 245.54                       | 3.36                        |
| 38000.00         | .3960848                | 03 | .5557125               | 02-                           | 248.31                       | 3.55                        |
| 39000.00         | .3459034                | 03 | .4799500               | 02-                           | 251.08                       | 3.73                        |
| 40000.00         | .3025421                | 03 | .4152015               | 02-                           | 253.85                       | 3.91                        |
| 41000.00         | .2650124                | 03 | .3597686               | 02-                           | 256.62                       | 4.08                        |
| 42000.00         | .2324783                | 03 | .3122294               | 02-                           | 259.39                       | 4.25                        |
| 43000.00         | .2042375                | 03 | .2712562               | 02-                           | 262.30                       | 4.37                        |
| 44000.00         | .1797087                | 03 | .2357006               | 02-                           | 265.62                       | 4.34                        |
| 45000.00         | .1583831                | 03 | .2051704               | 02-                           | 268.93                       | 4.34                        |
| 46000.00         | .1398097                | 03 | .1789054               | 02-                           | 272.25                       | 4.37                        |
| 47000.00         | .1236057                | 03 | .1562675               | 02-                           | 275.56                       | 4.42                        |
| 48000.00         | .1093841                | 03 | .1378941               | 02-                           | 276.35                       | 4.72                        |
| 49000.00         | .9682274                | 02 | .1219876               | 02-                           | 276.51                       | 4.90                        |
| 50000.00         | .8571355                | 02 | .1079282               | 02-                           | 276.67                       | 5.10                        |
| 51000.00         | .7588067                | 02 | .9561474               | 03-                           | 276.48                       | 5.43                        |
| 52000.00         | .6712528                | 02 | .8562914               | 03-                           | 273.10                       | 6.90                        |
| 53000.00         | .5929181                | 02 | .7658408               | 03-                           | 269.72                       | 7.82                        |
| 54000.00         | .5229267                | 02 | .6840078               | 03-                           | 266.34                       | 8.32                        |
| 55000.00         | .4606743                | 02 | .6061395               | 03-                           | 264.75                       | 8.10                        |
| 56000.00         | .4057192                | 02 | .5334056               | 03-                           | 264.98                       | 7.19                        |
| 57000.00         | .3573747                | 02 | .4694253               | 03-                           | 265.22                       | 6.39                        |
| 58000.00         | .3148391                | 02 | .4131829               | 03-                           | 265.46                       | 5.71                        |
| 59000.00         | .2771357                | 02 | .3690304               | 03-                           | 261.63                       | 6.67                        |
| 60000.00         | .2434977                | 02 | .3290756               | 03-                           | 257.78                       | 7.57                        |
| 61000.00         | .2135355                | 02 | .2929553               | 03-                           | 253.93                       | 8.38                        |
| 62000.00         | .1868840                | 02 | .2605211               | 03-                           | 249.91                       | 8.86                        |
| 63000.00         | .1632067                | 02 | .2313515               | 03-                           | 245.76                       | 8.86                        |
| 64000.00         | .1422073                | 02 | .2050422               | 03-                           | 241.62                       | 8.85                        |
| 65000.00         | .1236107                | 02 | .1815392               | 03-                           | 237.21                       | 8.93                        |
| 66000.00         | .1071482                | 02 | .1607720               | 03-                           | 232.18                       | 9.27                        |
| 67000.00         | .9259201                | 01 | .1420084               | 03-                           | 227.15                       | 9.54                        |
| 68000.00         | .7975573                | 01 | .1250923               | 03-                           | 222.12                       | 9.73                        |
| 69000.00         | .6861003                | 01 | .1071256               | 03-                           | 223.12                       | 7.12                        |
| 70000.00         | .5915209                | 01 | .9014031               | 04-                           | 228.61                       | 7.15                        |
| 71000.00         | .5118007                | 01 | .7616294               | 04-                           | 234.10                       | 8.08                        |
| 72000.00         | .4443325                | 01 | .6463761               | 04-                           | 239.59                       | 9.70                        |
| 73000.00         | .3861974                | 01 | .5658280               | 04-                           | 237.78                       | 11.79                       |
| 74000.00         | .3344096                | 01 | .5130595               | 04-                           | 227.07                       | 13.83                       |
| 75000.00         | .2875722                | 01 | .4630383               | 04-                           | 216.36                       | 15.47                       |
| 76000.00         | .2454196                | 01 | .4157436               | 04-                           | 205.55                       | 16.61                       |
| 77000.00         | .2072965                | 01 | .3650775               | 04-                           | 198.48                       | 17.34                       |
| 78000.00         | .1755003                | 01 | .3136146               | 04-                           | 194.95                       | 17.96                       |
| 79000.00         | .1476302                | 01 | .2686739               | 04-                           | 191.42                       | 18.65                       |
| 80000.00         | .1237930                | 01 | .2295243               | 04-                           | 187.90                       | 19.42                       |
| 81000.00         | .1034512                | 01 | .1957904               | 04-                           | 184.07                       | 20.00                       |
| 82000.00         | .8612477                | 00 | .1665902               | 04-                           | 180.11                       | 20.13                       |
| 83000.00         | .7141215                | 00 | .1412439               | 04-                           | 176.14                       | 20.77                       |
| 84000.00         | .5896413                | 00 | .1193114               | 04-                           | 172.17                       | 22.82                       |

# FIGURE 13

## WALLOPS ISLAND, 2 MAY 1966, 0114 GMT.

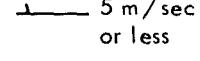
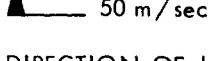
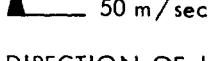
| WIND DIRECTION<br>degrees | WIND SPEED<br>m/sec | ERROR<br>m/sec ( $\pm$ ) | TEMPERATURE<br>degrees Kelvin | ERROR<br>degrees Kelvin ( $\pm$ ) | HEIGHT<br>meters |
|---------------------------|---------------------|--------------------------|-------------------------------|-----------------------------------|------------------|
| 273.96                    | 13.05               | 1.11                     | 242.19                        | .57                               | 33938.65         |
| 263.95                    | 15.08               | 1.59                     | 260.13                        | 1.49                              | 40037.44         |
| 278.41                    | 7.97                | 1.66                     | 272.52                        | 1.08                              | 44617.25         |
| 200.98                    | 8.53                | 2.03                     | 271.82                        | 2.14                              | 48415.90         |
| 95.67                     | 8.07                | 1.72                     | 275.64                        | 2.22                              | 52147.50         |
| 77.44                     | 10.23               | 2.02                     | 261.50                        | 2.20                              | 55792.05         |
| 96.47                     | 3.52                | 2.42                     | 251.85                        | 1.21                              | 59335.00         |
| 91.02                     | 24.32               | 2.30                     | 237.48                        | 1.11                              | 63352.20         |
| 117.92                    | 25.59               | 2.33                     | 228.59                        | 1.00                              | 67810.55         |
| 113.18                    | 25.92               | 2.65                     | 218.75                        | 1.20                              | 72109.64         |
| 126.69                    | 29.93               | 4.04                     | 193.12                        | 1.21                              | 76770.24         |
| 336.65                    | 12.37               | 5.63                     | 176.40                        | 1.33                              | 81254.24         |
| 293.63                    | 22.75               | 2.77                     | 196.30                        | 1.08                              | 85045.24         |
| 265.43                    | 38.32               | 3.82                     | 189.24                        | 1.42                              | 88239.99         |



WIND COMPONENTS  
m/sec

| HEIGHT<br>meters | SOUTH<br>component (+) | WEST<br>component (+) |
|------------------|------------------------|-----------------------|
| 35000.00         | -.46                   | 13.36                 |
| 40000.00         | 1.57                   | 14.98                 |
| 45000.00         | -.24                   | 7.40                  |
| 50000.00         | 4.92                   | -1.65                 |
| 55000.00         | -1.56                  | -9.56                 |
| 60000.00         | .40                    | -6.94                 |
| 65000.00         | 4.70                   | -23.68                |
| 70000.00         | 11.07                  | -23.23                |
| 75000.00         | 14.96                  | -23.93                |
| 80000.00         | -3.18                  | -3.18                 |
| 85000.00         | -9.14                  | 20.65                 |

### LEGEND

 5 m/sec  
or less
  10 m/sec
  50 m/sec

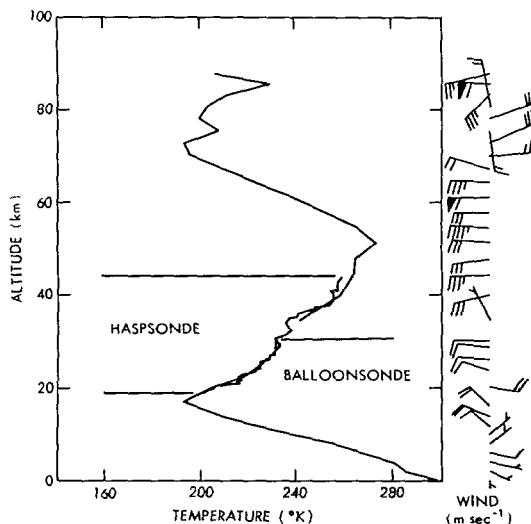
DIRECTION OF  
NORTH WIND

| HEIGHT<br>meters | PRESSURE<br>nt/sq meter |    | DENSITY<br>kg/cu meter | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>(%) | DENSITY<br>deviation<br>(%) |
|------------------|-------------------------|----|------------------------|-------------------------------|------------------------------|-----------------------------|
| 26000.00         | .2175604                | 04 | .3438955               | 01-                           | 220.40                       | .58-                        |
| 27000.00         | .1867552                | 04 | .2915715               | 01-                           | 223.14                       | .66-                        |
| 28000.00         | .1606188                | 04 | .2477196               | 01-                           | 225.88                       | .61-                        |
| 29000.00         | .1383984                | 04 | .2108873               | 01-                           | 228.63                       | .46-                        |
| 30000.00         | .1194695                | 04 | .1798849               | 01-                           | 231.37                       | .19-                        |
| 31000.00         | .1033133                | 04 | .1537351               | 01-                           | 234.12                       | .18                         |
| 32000.00         | .8449728                | 03 | .1316333               | 01-                           | 236.86                       | .66                         |
| 33000.00         | .7766066                | 03 | .1129157               | 01-                           | 239.61                       | 1.21                        |
| 34000.00         | .6750165                | 03 | .9702866               | 02-                           | 242.36                       | 1.74                        |
| 35000.00         | .5877028                | 03 | .8346502               | 02-                           | 245.30                       | 2.28                        |
| 36000.00         | .5125505                | 03 | .7192947               | 02-                           | 248.24                       | 2.81                        |
| 37000.00         | .4477482                | 03 | .6209956               | 02-                           | 251.19                       | 3.34                        |
| 38000.00         | .3917712                | 03 | .5370705               | 02-                           | 254.13                       | 3.88                        |
| 39000.00         | .3433338                | 03 | .4652833               | 02-                           | 257.07                       | 4.41                        |
| 40000.00         | .3013404                | 03 | .4037666               | 02-                           | 260.01                       | 4.94                        |
| 41000.00         | .2648833                | 03 | .3512403               | 02-                           | 262.72                       | 5.47                        |
| 42000.00         | .2331476                | 03 | .3060069               | 02-                           | 265.43                       | 5.99                        |
| 43000.00         | .2054881                | 03 | .2669823               | 02-                           | 268.14                       | 6.43                        |
| 44000.00         | .1813467                | 03 | .2332628               | 02-                           | 270.84                       | 6.99                        |
| 45000.00         | .1602065                | 03 | .2048606               | 02-                           | 272.44                       | 7.44                        |
| 46000.00         | .1415806                | 03 | .1811656               | 02-                           | 272.26                       | 7.79                        |
| 47000.00         | .1251148                | 03 | .1602044               | 02-                           | 272.07                       | 7.99                        |
| 48000.00         | .1105592                | 03 | .1416623               | 02-                           | 271.89                       | 8.07                        |
| 49000.00         | .9770876                | 02 | .1249569               | 02-                           | 272.41                       | 8.16                        |
| 50000.00         | .8638535                | 02 | .1100619               | 02-                           | 273.44                       | 8.26                        |
| 51000.00         | .7641227                | 02 | .9699211               | 03-                           | 274.46                       | 8.45                        |
| 52000.00         | .6762406                | 02 | .8551788               | 03-                           | 275.48                       | 8.67                        |
| 53000.00         | .5982029                | 02 | .7652578               | 03-                           | 272.33                       | 8.85                        |
| 54000.00         | .5283474                | 02 | .6856605               | 03-                           | 268.45                       | 8.95                        |
| 55000.00         | .4658248                | 02 | .6133850               | 03-                           | 264.57                       | 8.96                        |
| 56000.00         | .4099780                | 02 | .5473758               | 03-                           | 260.93                       | 8.87                        |
| 57000.00         | .3602770                | 02 | .4860934               | 03-                           | 258.21                       | 8.71                        |
| 58000.00         | .3161803                | 02 | .4311460               | 03-                           | 255.48                       | 8.51                        |
| 59000.00         | .2771042                | 02 | .3819341               | 03-                           | 252.76                       | 8.26                        |
| 60000.00         | .2424839                | 02 | .3386258               | 03-                           | 249.47                       | 7.96                        |
| 61000.00         | .2118055                | 02 | .3000861               | 03-                           | 245.89                       | 7.56                        |
| 62000.00         | .1846500                | 02 | .2654736               | 03-                           | 242.31                       | 7.07                        |
| 63000.00         | .1606549                | 02 | .2344358               | 03-                           | 238.74                       | 6.56                        |
| 64000.00         | .1395334                | 02 | .2058140               | 03-                           | 235.18                       | 6.10                        |
| 65000.00         | .1210291                | 02 | .1800403               | 03-                           | 234.19                       | 5.73                        |
| 66000.00         | .1048559                | 02 | .1573211               | 03-                           | 232.20                       | 5.48                        |
| 67000.00         | .9073563                | 01 | .1373151               | 03-                           | 230.20                       | 5.34                        |
| 68000.00         | .7842024                | 01 | .1197440               | 03-                           | 228.15                       | 5.33                        |
| 69000.00         | .6768504                | 01 | .1043991               | 03-                           | 225.86                       | 5.44                        |
| 70000.00         | .5833458                | 01 | .9089772               | 04-                           | 223.57                       | 5.66                        |
| 71000.00         | .5020136                | 01 | .7903343               | 04-                           | 221.29                       | 6.02                        |
| 72000.00         | .4313674                | 01 | .6862109               | 04-                           | 219.00                       | 6.50                        |
| 73000.00         | .3697141                | 01 | .6022884               | 04-                           | 213.85                       | 7.02                        |
| 74000.00         | .3156578                | 01 | .5277973               | 04-                           | 208.35                       | 7.45                        |
| 75000.00         | .2683817                | 01 | .4609132               | 04-                           | 202.85                       | 7.76                        |
| 76000.00         | .2271826                | 01 | .4010290               | 04-                           | 197.35                       | 7.95                        |
| 77000.00         | .1914491                | 01 | .3469024               | 04-                           | 192.26                       | 8.01                        |
| 78000.00         | .1607071                | 01 | .2969604               | 04-                           | 188.53                       | 8.02                        |
| 79000.00         | .1344379                | 01 | .2534338               | 04-                           | 184.80                       | 8.05                        |
| 80000.00         | .1120603                | 01 | .2156013               | 04-                           | 181.37                       | 8.10                        |
| 81000.00         | .9305953                | 00 | .1828106               | 04-                           | 177.34                       | 7.95                        |
| 82000.00         | .7725454                | 00 | .1492651               | 04-                           | 180.31                       | 7.76                        |
| 83000.00         | .6440560                | 00 | .1209183               | 04-                           | 185.56                       | 8.02                        |
| 84000.00         | .5396987                | 00 | .9853759               | 05-                           | 190.81                       | 8.82                        |
| 85000.00         | .4544504                | 00 | .8075101               | 05-                           | 196.06                       | 10.17                       |
| 86000.00         | .3832608                | 00 | .6875833               | 05-                           | 190.19                       | 11.69                       |
| 87000.00         | .3226582                | 00 | .5855262               | 05-                           | 191.97                       | 13.03                       |
| 88000.00         | .2711118                | 00 | .4977170               | 05-                           | 189.76                       | 14.17                       |

# FIGURE 14

## NATAL, 2 MAY 1966, 0119 GMT.

| WIND DIRECTION<br>degrees | WIND SPEED<br>m/sec | ERROR<br>m/sec ( $\pm$ ) | TEMPERATURE<br>degrees Kelvin | ERROR<br>degrees Kelvin ( $\pm$ ) | HEIGHT<br>meters |
|---------------------------|---------------------|--------------------------|-------------------------------|-----------------------------------|------------------|
| 338.99                    | 3.48                | 1.74                     | 240.70                        | .51                               | 34454.45         |
| 259.49                    | 29.71               | 3.91                     | 258.13                        | .82                               | 40123.55         |
| 267.18                    | 35.98               | 6.22                     | 263.48                        | 1.43                              | 44368.55         |
| 258.09                    | 32.07               | 14.37                    | 264.34                        | 3.52                              | 47874.85         |
| 275.88                    | 30.07               | 15.17                    | 273.49                        | 4.14                              | 51313.25         |
| 275.71                    | 44.72               | 14.09                    | 265.00                        | 3.79                              | 54671.35         |
| 269.99                    | 32.44               | 13.66                    | 250.84                        | 3.58                              | 57926.70         |
| 270.09                    | 57.60               | 16.77                    | 239.48                        | 4.22                              | 61098.35         |
| 272.50                    | 34.38               | 21.69                    | 222.99                        | 5.45                              | 64178.79         |
| 295.00                    | 18.15               | 5.81                     | 207.78                        | 6.06                              | 67171.69         |
| 86.52                     | 14.26               | 42.46                    | 195.54                        | 8.83                              | 70087.09         |
| 66.20                     | 29.88               | 46.12                    | 193.41                        | 11.00                             | 72925.64         |
| 177.57                    | 16.39               | 49.81                    | 206.74                        | 11.12                             | 75657.60         |
| 71.18                     | 28.69               | 34.37                    | 199.51                        | 8.07                              | 78287.65         |
| 355.91                    | 15.05               | 17.12                    | 202.85                        | 5.12                              | 80832.44         |
| 221.18                    | 37.01               | 18.42                    | 209.73                        | 5.19                              | 83294.44         |
| 277.84                    | 60.51               | 49.96                    | 228.34                        | 15.71                             | 85678.05         |
| 249.57                    | 23.26               | 40.77                    | 205.41                        | 15.58                             | 87915.05         |



WIND COMPONENTS  
m/sec

| HEIGHT<br>meters | SOUTH<br>component (+) | WEST<br>component (+) |
|------------------|------------------------|-----------------------|
| 35000.00         | -2.41                  | 3.94                  |
| 40000.00         | 5.23                   | 28.60                 |
| 45000.00         | 2.64                   | 35.11                 |
| 50000.00         | .62                    | 30.47                 |
| 55000.00         | -4.00                  | 43.28                 |
| 60000.00         | -.05                   | 48.88                 |
| 65000.00         | -3.19                  | 29.43                 |
| 70000.00         | -1.06                  | -13.31                |
| 75000.00         | 9.53                   | -7.10                 |
| 80000.00         | -13.13                 | -8.16                 |
| 85000.00         | 2.02                   | 49.82                 |

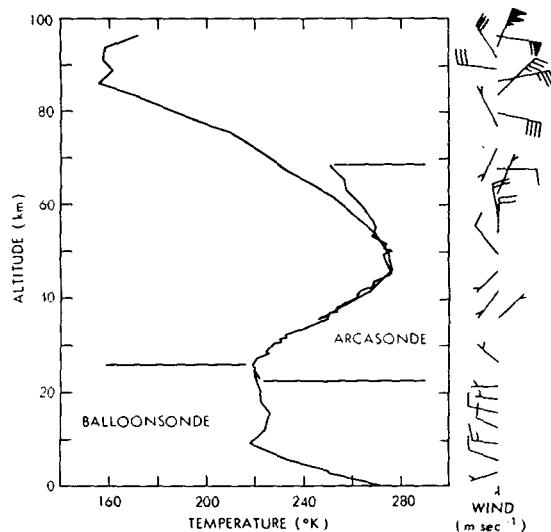
### LEGEND

| HEIGHT<br>meters | PRESSURE<br>nt/sq meter |    | DENSITY<br>kg/cu meter | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>(%) | DENSITY<br>deviation<br>(%) |
|------------------|-------------------------|----|------------------------|-------------------------------|------------------------------|-----------------------------|
| 29000.00         | .1399753                | 04 | .2112863               | 01- 230.80                    | .67                          | 1.62-                       |
| 30000.00         | .1209412                | 04 | .1822775               | 01- 231.15                    | 1.03                         | .98-                        |
| 31000.00         | .1045809                | 04 | .1561904               | 01- 233.26                    | 1.41                         | 1.09-                       |
| 32000.00         | .9055761                | 03 | .1340105               | 01- 235.42                    | 1.85                         | 1.13-                       |
| 33000.00         | .7852098                | 03 | .1151458               | 01- 237.57                    | 2.33                         | .50-                        |
| 34000.00         | .6817482                | 03 | .9907652               | 02- 239.72                    | 2.76                         | .20                         |
| 35000.00         | .5927790                | 03 | .8520308               | 02- 242.37                    | 3.16                         | .67                         |
| 36000.00         | .5162899                | 03 | .7327924               | 02- 245.45                    | 3.56                         | .96                         |
| 37000.00         | .4504638                | 03 | .6314518               | 02- 248.52                    | 3.97                         | 1.26                        |
| 38000.00         | .3937066                | 03 | .5451457               | 02- 251.60                    | 4.39                         | 1.58                        |
| 39000.00         | .3446784                | 03 | .4714964               | 02- 254.67                    | 4.82                         | 1.90                        |
| 40000.00         | .3022502                | 03 | .4085249               | 02- 257.75                    | 5.26                         | 2.24                        |
| 41000.00         | .2653629                | 03 | .3566147               | 02- 259.23                    | 5.66                         | 3.17                        |
| 42000.00         | .2331471                | 03 | .3118056               | 02- 260.49                    | 5.99                         | 4.11                        |
| 43000.00         | .2049785                | 03 | .2728146               | 02- 261.75                    | 6.23                         | 4.97                        |
| 44000.00         | .1803318                | 03 | .2388618               | 02- 263.01                    | 6.39                         | 5.74                        |
| 45000.00         | .1587274                | 03 | .2097523               | 02- 263.63                    | 6.45                         | 6.67                        |
| 46000.00         | .1307467                | 03 | .1844991               | 02- 263.88                    | 6.40                         | 7.63                        |
| 47000.00         | .1230546                | 03 | .1623115               | 02- 264.12                    | 6.21                         | 8.46                        |
| 48000.00         | .1083812                | 03 | .1426617               | 02- 264.67                    | 5.94                         | 8.34                        |
| 49000.00         | .9553414                | 02 | .1244991               | 02- 267.37                    | 5.75                         | 7.06                        |
| 50000.00         | .8431854                | 02 | .1087909               | 02- 269.99                    | 5.69                         | 5.95                        |
| 51000.00         | .7451373                | 02 | .9520969               | 02- 272.65                    | 5.75                         | 4.98                        |
| 52000.00         | .6587791                | 02 | .8445478               | 03- 271.75                    | 5.86                         | 5.44                        |
| 53000.00         | .5819965                | 02 | .7531192               | 03- 269.22                    | 5.90                         | 6.03                        |
| 54000.00         | .5135825                | 02 | .6708891               | 03- 266.69                    | 5.91                         | 6.25                        |
| 55000.00         | .4526241                | 02 | .5982747               | 03- 263.56                    | 5.87                         | 6.69                        |
| 56000.00         | .3981961                | 02 | .5351658               | 03- 259.21                    | 5.74                         | 7.54                        |
| 57000.00         | .3495683                | 02 | .4778312               | 03- 254.86                    | 5.48                         | 8.30                        |
| 58000.00         | .3062087                | 02 | .4257354               | 03- 250.57                    | 5.09                         | 8.92                        |
| 59000.00         | .2676770                | 02 | .3775606               | 03- 246.99                    | 4.58                         | 9.14                        |
| 60000.00         | .2335445                | 02 | .3342642               | 03- 243.41                    | 3.98                         | 9.26                        |
| 61000.00         | .2033615                | 02 | .2954117               | 03- 239.82                    | 3.27                         | 9.29                        |
| 62000.00         | .1766347                | 02 | .2622492               | 03- 234.65                    | 2.42                         | 9.58                        |
| 63000.00         | .1529373                | 02 | .2323656               | 03- 229.29                    | 1.44                         | 9.33                        |
| 64000.00         | .1319754                | 02 | .2053093               | 03- 223.94                    | .35                          | 8.99                        |
| 65000.00         | .1134952                | 02 | .1806998               | 03- 218.81                    | .84-                         | 8.43                        |
| 66000.00         | .9726039                | 01 | .1585336               | 03- 213.73                    | 2.15-                        | 7.75                        |
| 67000.00         | .8304287                | 01 | .1386559               | 03- 208.65                    | 3.58-                        | 6.95                        |
| 68000.00         | .7065189                | 01 | .1204787               | 03- 204.30                    | 5.10-                        | 5.69                        |
| 69000.00         | .5990787                | 01 | .1043010               | 03- 200.10                    | 6.67-                        | 4.30                        |
| 70000.00         | .5062206                | 01 | .9002466               | 04- 195.90                    | 8.29-                        | 2.84                        |
| 71000.00         | .4268291                | 01 | .7631415               | 04- 194.85                    | 9.85-                        | .16-                        |
| 72000.00         | .3596166                | 01 | .6454585               | 04- 194.10                    | 11.20-                       | 3.07-                       |
| 73000.00         | .3028586                | 01 | .5445190               | 04- 193.76                    | 12.32-                       | 5.89-                       |
| 74000.00         | .2555790                | 01 | .4482270               | 04- 198.64                    | 12.99-                       | 10.62-                      |
| 75000.00         | .2165815                | 01 | .3707285               | 04- 203.52                    | 13.03-                       | 14.48-                      |
| 76000.00         | .1840763                | 01 | .3116171               | 04- 205.79                    | 12.53-                       | 16.59-                      |
| 77000.00         | .1564273                | 01 | .2683959               | 04- 203.04                    | 11.74-                       | 16.38-                      |
| 78000.00         | .1326434                | 01 | .2307113               | 04- 203.29                    | 10.84-                       | 16.10-                      |
| 79000.00         | .1123616                | 01 | .1952927               | 04- 200.44                    | 9.69-                        | 16.86-                      |
| 80000.00         | .9524295                | 00 | .1644612               | 04- 201.75                    | 8.12-                        | 17.72-                      |
| 81000.00         | .8083132                | 00 | .1385036               | 04- 203.31                    | 6.23-                        | 16.66-                      |
| 82000.00         | .6872353                | 00 | .1161636               | 04- 206.11                    | 4.13-                        | 15.34-                      |
| 83000.00         | .5856010                | 00 | .9765725               | 05- 208.90                    | 1.78-                        | 15.08-                      |
| 84000.00         | .5007379                | 00 | .8104962               | 05- 215.23                    | .97                          | 15.24-                      |
| 85000.00         | .4303584                | 00 | .6722008               | 05- 223.04                    | 4.72                         | 15.50-                      |
| 86000.00         | .3711207                | 00 | .5745383               | 05- 225.03                    | 8.15                         | 17.17-                      |
| 87000.00         | .3191552                | 00 | .5176610               | 05- 214.79                    | 11.81                        | 5.94-                       |

# FIGURE 15

## CHURCHILL, 2 MAY 1966, 0232 GMT.

| WIND DIRECTION<br>degrees | WIND SPEED<br>m/sec | ERROR<br>m/sec ( $\pm$ ) | TEMPERATURE<br>degrees Kelvin | ERROR<br>degrees Kelvin ( $\pm$ ) | HEIGHT<br>meters |
|---------------------------|---------------------|--------------------------|-------------------------------|-----------------------------------|------------------|
| 49.38                     | 4.53                | 2.96                     | 246.27                        | 1.25                              | 35545.35         |
| 214.96                    | 6.43                | 2.80                     | 267.93                        | 1.42                              | 41485.45         |
| 223.93                    | 7.28                | 3.51                     | 277.48                        | 2.24                              | 45952.25         |
| 323.16                    | 7.66                | 6.35                     | 275.29                        | 2.51                              | 49666.45         |
| 1.28                      | 19.96               | 7.23                     | 269.66                        | 2.22                              | 53293.15         |
| 354.56                    | 19.67               | 7.37                     | 263.11                        | 1.98                              | 56821.40         |
| 18.65                     | .79                 | 7.33                     | 252.10                        | 1.11                              | 61913.70         |
| 89.49                     | 11.03               | 15.59                    | 233.05                        | 2.08                              | 67398.45         |
| 206.97                    | 3.09                | 13.33                    | 221.65                        | 1.98                              | 71591.05         |
| 336.19                    | 4.52                | 12.72                    | 210.26                        | 1.54                              | 75622.69         |
| 101.55                    | 40.69               | 14.65                    | 189.33                        | 1.46                              | 79517.94         |
| 44.97                     | 34.78               | 9.17                     | 171.70                        | .79                               | 83261.35         |
| 73.75                     | 32.95               | 7.01                     | 156.36                        | .44                               | 86393.70         |
| 277.62                    | 30.49               | 14.47                    | 161.86                        | 1.47                              | 88978.24         |
| 326.54                    | 30.32               | 29.46                    | 158.42                        | 1.83                              | 91473.14         |
| 21.45                     | 107.40              | 26.93                    | 158.94                        | 1.61                              | 93875.10         |
| 97.19                     | 61.14               | 79.59                    | 172.63                        | 3.15                              | 96142.20         |



WIND COMPONENTS  
m/sec

| HEIGHT<br>meters | SOUTH<br>component (+) | WEST<br>component (+) |
|------------------|------------------------|-----------------------|
| 40000.00         | 3.21                   | 1.90                  |
| 45000.00         | 5.24                   | 4.76                  |
| 50000.00         | -7.40                  | 4.13                  |
| 55000.00         | -19.77                 | .67                   |
| 60000.00         | -7.82                  | .54                   |
| 65000.00         | -.38                   | -6.31                 |
| 70000.00         | 1.67                   | -3.31                 |
| 75000.00         | -3.07                  | 1.76                  |
| 80000.00         | 3.92                   | -37.89                |
| 85000.00         | -16.06                 | -28.49                |
| 90000.00         | -12.74                 | 24.69                 |
| 95000.00         | -46.56                 | -49.88                |

### LEGEND

— 5 m/sec      ▲ 50 m/sec  
or less

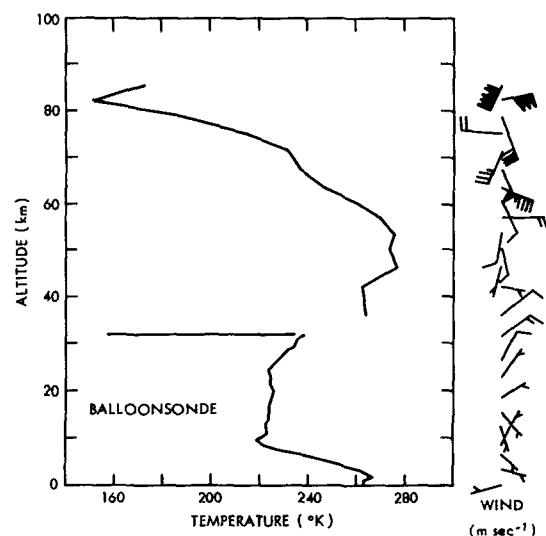
— 10 m/sec      ↓ DIRECTION OF NORTH WIND

| HEIGHT<br>meters | PRESSURE<br>nt./sq. meter | DENSITY<br>kg./cu meter | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>(%) | DENSITY<br>deviation<br>(%) |
|------------------|---------------------------|-------------------------|-------------------------------|------------------------------|-----------------------------|
| 31000.00         | .1004436                  | .04                     | .1500943                      | .01-                         | 231.75                      |
| 32000.00         | .8687295                  | .03                     | .1268182                      | .01-                         | 234.94                      |
| 33000.00         | .7528659                  | .03                     | .1101400                      | .01-                         | 238.13                      |
| 34000.00         | .6537299                  | .03                     | .9437102                      | .02-                         | 241.33                      |
| 35000.00         | .5687275                  | .03                     | .8107770                      | .02-                         | 244.52                      |
| 36000.00         | .4957225                  | .03                     | .6065709                      | .02-                         | 247.72                      |
| 37000.00         | .4320454                  | .03                     | .5095484                      | .02-                         | 251.57                      |
| 38000.00         | .3788713                  | .03                     | .5171637                      | .02-                         | 255.22                      |
| 39000.00         | .3321929                  | .03                     | .4470618                      | .02-                         | 258.86                      |
| 40000.00         | .2918134                  | .03                     | .3872569                      | .02-                         | 262.51                      |
| 41000.00         | .2558111                  | .03                     | .3361459                      | .02-                         | 266.16                      |
| 42000.00         | .2263682                  | .03                     | .2931378                      | .02-                         | 269.03                      |
| 43000.00         | .1907755                  | .03                     | .2564625                      | .02-                         | 271.16                      |
| 44000.00         | .1764267                  | .03                     | .2242611                      | .02-                         | 273.30                      |
| 45000.00         | .1560693                  | .03                     | .1973203                      | .02-                         | 275.44                      |
| 46000.00         | .1381464                  | .03                     | .1754663                      | .02-                         | 277.44                      |
| 47000.00         | .1223246                  | .03                     | .1539266                      | .02-                         | 276.85                      |
| 48000.00         | .1082208                  | .03                     | .1365582                      | .02-                         | 276.26                      |
| 49000.00         | .9584561                  | .02                     | .1211230                      | .02-                         | 275.67                      |
| 50000.00         | .8480570                  | .02                     | .1075268                      | .02-                         | 274.76                      |
| 51000.00         | .7499905                  | .02                     | .9563302                      | .03-                         | 273.21                      |
| 52000.00         | .6628252                  | .02                     | .8500127                      | .03-                         | 271.66                      |
| 53000.00         | .5853087                  | .02                     | .7550343                      | .03-                         | 270.11                      |
| 54000.00         | .5166411                  | .02                     | .6707271                      | .03-                         | 268.34                      |
| 55000.00         | .4555717                  | .02                     | .5955947                      | .03-                         | 266.42                      |
| 56000.00         | .4014123                  | .02                     | .5284526                      | .03-                         | 264.63                      |
| 57000.00         | .3533829                  | .02                     | .4685960                      | .03-                         | 262.72                      |
| 58000.00         | .3137989                  | .02                     | .4155498                      | .03-                         | 260.56                      |
| 59000.00         | .2730642                  | .02                     | .3681545                      | .03-                         | 258.40                      |
| 60000.00         | .2396609                  | .02                     | .3258461                      | .03-                         | 256.23                      |
| 61000.00         | .2101193                  | .02                     | .2881133                      | .03-                         | 254.07                      |
| 62000.00         | .1840141                  | .02                     | .2545991                      | .03-                         | 251.79                      |
| 63000.00         | .1609132                  | .02                     | .2257509                      | .03-                         | 248.32                      |
| 64000.00         | .1404526                  | .02                     | .1998412                      | .03-                         | 244.85                      |
| 65000.00         | .1223609                  | .02                     | .1766049                      | .03-                         | 241.37                      |
| 66000.00         | .1063914                  | .02                     | .1557978                      | .03-                         | 237.90                      |
| 67000.00         | .9232004                  | .01                     | .13711949                     | .03-                         | 234.43                      |
| 68000.00         | .7995517                  | .01                     | .1203703                      | .03-                         | 231.41                      |
| 69000.00         | .6912543                  | .01                     | .1053038                      | .03-                         | 228.69                      |
| 70000.00         | .5966132                  | .01                     | .9198021                      | .04-                         | 225.57                      |
| 71000.00         | .5140363                  | .01                     | .8021460                      | .04-                         | 223.25                      |
| 72000.00         | .4420952                  | .01                     | .6985249                      | .04-                         | 220.49                      |
| 73000.00         | .3795101                  | .01                     | .6074175                      | .04-                         | 217.66                      |
| 74000.00         | .3251518                  | .01                     | .5272554                      | .04-                         | 214.84                      |
| 75000.00         | .2780237                  | .01                     | .4568384                      | .04-                         | 212.02                      |
| 76000.00         | .2371529                  | .01                     | .3967666                      | .04-                         | 208.23                      |
| 77000.00         | .2015840                  | .01                     | .3161942                      | .04-                         | 202.85                      |
| 78000.00         | .1706126                  | .01                     | .3009794                      | .04-                         | 197.48                      |
| 79000.00         | .1437140                  | .01                     | .2606750                      | .04-                         | 192.10                      |
| 80000.00         | .1205440                  | .01                     | .2245090                      | .04-                         | 187.05                      |
| 81000.00         | .1006429                  | .01                     | .1922506                      | .04-                         | 182.34                      |
| 82000.00         | .8360605                  | .00                     | .1639698                      | .04-                         | 177.63                      |
| 83000.00         | .6912471                  | .00                     | .1392607                      | .04-                         | 172.92                      |
| 84000.00         | .5685117                  | .00                     | .1178378                      | .04-                         | 168.07                      |
| 85000.00         | .4649161                  | .00                     | .9925712                      | .05-                         | 163.18                      |
| 86000.00         | .3777897                  | .00                     | .8317555                      | .05-                         | 158.28                      |
| 87000.00         | .3060797                  | .00                     | .6764018                      | .05-                         | 157.64                      |
| 88000.00         | .2481716                  | .00                     | .5411196                      | .05-                         | 159.77                      |
| 89000.00         | .2017821                  | .00                     | .4343869                      | .05-                         | 161.83                      |
| 90000.00         | .1641455                  | .00                     | .3564030                      | .05-                         | 160.45                      |
| 91000.00         | .1332997                  | .00                     | .2919386                      | .05-                         | 159.07                      |
| 92000.00         | .1081214                  | .00                     | .2376019                      | .05-                         | 158.53                      |
| 93000.00         | .8768645                  | .01-                    | .1924348                      | .05-                         | 158.74                      |
| 94000.00         | .7117197                  | .01-                    | .1552711                      | .05-                         | 159.69                      |
| 95000.00         | .5802925                  | .01-                    | .1219848                      | .05-                         | 165.72                      |
| 96000.00         | .4766342                  | .01-                    | .9667149                      | .06-                         | 171.76                      |

# FIGURE 16

## BARROW, 3 MAY 1966, 2201 GMT.

| WIND DIRECTION<br>degrees | WIND SPEED<br>m/sec | ERROR<br>m/sec ( $\pm$ ) | TEMPERATURE<br>degrees Kelvin | ERROR<br>degrees Kelvin ( $\pm$ ) | HEIGHT<br>meters |
|---------------------------|---------------------|--------------------------|-------------------------------|-----------------------------------|------------------|
| 54.47                     | 9.47                | 2.17                     | 264.33                        | .57                               | 36125.00         |
| 99.55                     | 6.55                | 4.95                     | 263.10                        | 1.18                              | 42138.30         |
| 192.58                    | 5.68                | 6.69                     | 277.31                        | 1.58                              | 46545.40         |
| 174.69                    | 7.67                | 2.61                     | 274.20                        | .63                               | 50187.05         |
| 183.96                    | 11.35               | 6.12                     | 276.08                        | 1.57                              | 53721.90         |
| 89.60                     | 13.81               | 20.45                    | 270.23                        | 4.87                              | 57148.04         |
| 161.74                    | 10.25               | 24.89                    | 260.62                        | 4.84                              | 60456.40         |
| 110.66                    | 43.70               | 15.41                    | 246.18                        | 3.50                              | 63675.20         |
| 150.26                    | 52.35               | 30.60                    | 237.96                        | 5.83                              | 67300.99         |
| 201.18                    | 35.42               | 35.97                    | 232.27                        | 7.42                              | 71291.74         |
| 279.78                    | 21.33               | 18.36                    | 215.44                        | 6.98                              | 75118.45         |
| 162.62                    | 42.05               | 26.81                    | 187.90                        | 4.87                              | 78808.95         |
| 70.69                     | 150.96              | 41.51                    | 152.28                        | 7.51                              | 82339.80         |
| 190.21                    | 211.72              | 84.73                    | 172.87                        | 16.02                             | 85282.85         |



WIND COMPONENTS  
m/sec

| HEIGHT<br>meters | SOUTH<br>component (+) | WEST<br>component (+) |
|------------------|------------------------|-----------------------|
| 40000.00         | -1.25                  | -6.90                 |
| 45000.00         | 3.98                   | -1.46                 |
| 50000.00         | 7.53                   | -.61                  |
| 55000.00         | 7.06                   | -4.65                 |
| 60000.00         | 8.37                   | -4.67                 |
| 65000.00         | 26.39                  | -35.43                |
| 70000.00         | 37.05                  | .24                   |
| 75000.00         | -2.48                  | 20.77                 |
| 80000.00         | 9.74                   | -56.40                |
| 85000.00         | 183.54                 | 20.23                 |

### LEGEND

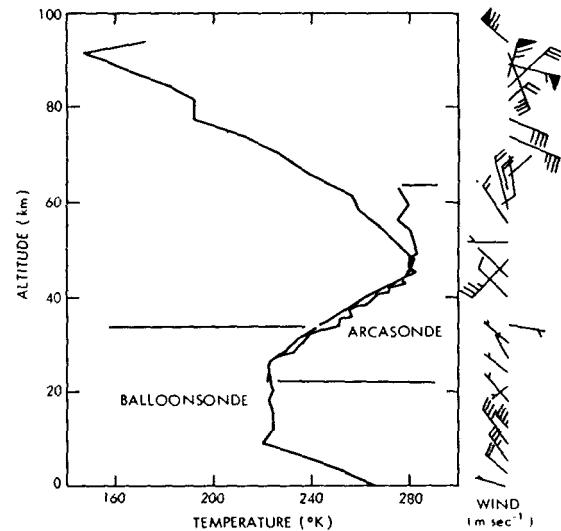
— 5 m/sec or less      ▲ 50 m/sec  
 \ 10 m/sec      DIRECTION OF NORTH WIND ↓

| HEIGHT<br>meters | PRESSURE<br>nt/sq meter | DENSITY<br>kg/cu meter | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>(%) | DENSITY<br>deviation<br>(%) |
|------------------|-------------------------|------------------------|-------------------------------|------------------------------|-----------------------------|
| 21000.00         | .1061668                | 04                     | .1560033                      | 01-                          | 237.09                      |
| 22000.00         | .9216757                | 07                     | .1324629                      | 01-                          | 242.40                      |
| 23000.00         | .8026355                | 03                     | .1128790                      | 01-                          | 247.72                      |
| 24000.00         | .7010549                | 03                     | .9652251                      | 02-                          | 253.03                      |
| 25000.00         | .6140805                | 03                     | .8280826                      | 02-                          | 258.35                      |
| 26000.00         | .5393710                | 03                     | .7126753                      | 02-                          | 263.66                      |
| 27000.00         | .4744478                | 03                     | .6257407                      | 02-                          | 264.15                      |
| 28000.00         | .4173835                | 03                     | .5509074                      | 02-                          | 263.90                      |
| 29000.00         | .3671595                | 03                     | .4849932                      | 02-                          | 263.74                      |
| 30000.00         | .3229600                | 03                     | .4269406                      | 02-                          | 263.53                      |
| 31000.00         | .2840649                | 03                     | .3758152                      | 02-                          | 263.33                      |
| 32000.00         | .2498382                | 03                     | .3307913                      | 02-                          | 263.12                      |
| 33000.00         | .2198811                | 03                     | .2881148                      | 02-                          | 265.87                      |
| 34000.00         | .1937999                | 03                     | .2508921                      | 02-                          | 269.10                      |
| 35000.00         | .1710761                | 03                     | .2188542                      | 02-                          | 272.32                      |
| 36000.00         | .1512446                | 03                     | .1912191                      | 02-                          | 275.55                      |
| 37000.00         | .1338543                | 03                     | .1683952                      | 02-                          | 276.92                      |
| 38000.00         | .1184814                | 03                     | .1495173                      | 02-                          | 276.06                      |
| 39000.00         | .1048382                | 03                     | .1327118                      | 02-                          | 275.21                      |
| 40000.00         | .9273440                | 02                     | .1177561                      | 02-                          | 274.35                      |
| 41000.00         | .8202075                | 02                     | .1040484                      | 02-                          | 274.63                      |
| 42000.00         | .7256052                | 02                     | .9186955                      | 03-                          | 275.16                      |
| 43000.00         | .6420901                | 02                     | .8113878                      | 03-                          | 275.69                      |
| 44000.00         | .5682575                | 02                     | .7183236                      | 03-                          | 275.60                      |
| 45000.00         | .5027385                | 02                     | .6394638                      | 03-                          | 273.89                      |
| 46000.00         | .4444450                | 02                     | .5688643                      | 03-                          | 272.19                      |
| 47000.00         | .3926311                | 02                     | .5057091                      | 03-                          | 270.48                      |
| 48000.00         | .3465130                | 02                     | .4508556                      | 03-                          | 267.75                      |
| 49000.00         | .3054158                | 02                     | .4017474                      | 03-                          | 264.85                      |
| 50000.00         | .2688361                | 02                     | .3575474                      | 03-                          | 261.94                      |
| 51000.00         | .2362568                | 02                     | .3187998                      | 03-                          | 258.18                      |
| 52000.00         | .2072020                | 02                     | .2845389                      | 03-                          | 253.69                      |
| 53000.00         | .1813028                | 02                     | .2534557                      | 03-                          | 249.20                      |
| 54000.00         | .1582947                | 02                     | .2246864                      | 03-                          | 245.44                      |
| 55000.00         | .1379811                | 02                     | .1976788                      | 03-                          | 241.17                      |
| 56000.00         | .1201249                | 02                     | .1737165                      | 03-                          | 240.90                      |
| 57000.00         | .1044470                | 02                     | .1524791                      | 03-                          | 238.64                      |
| 58000.00         | .9271404                | 01                     | .1333671                      | 03-                          | 236.92                      |
| 59000.00         | .7871720                | 01                     | .1164319                      | 03-                          | 225.53                      |
| 60000.00         | .6825114                | 01                     | .1015662                      | 02-                          | 234.10                      |
| 61000.00         | .5912770                | 01                     | .8852868                      | 04-                          | 232.68                      |
| 62000.00         | .5114720                | 01                     | .7775970                      | 04-                          | 229.15                      |
| 63000.00         | .4413387                | 01                     | .6841476                      | 04-                          | 224.74                      |
| 64000.00         | .3737319                | 01                     | .6003509                      | 04-                          | 220.35                      |
| 65000.00         | .3257515                | 01                     | .5254946                      | 04-                          | 215.96                      |
| 66000.00         | .2762986                | 01                     | .4642060                      | 04-                          | 208.86                      |
| 67000.00         | .2361444                | 01                     | .4090074                      | 04-                          | 201.39                      |
| 68000.00         | .1976626                | 01                     | .3586725                      | 04-                          | 193.93                      |
| 69000.00         | .1674571                | 01                     | .3137053                      | 04-                          | 185.26                      |
| 70000.00         | .1392243                | 01                     | .2757717                      | 04-                          | 175.88                      |
| 71000.00         | .1145028                | 01                     | .2406010                      | 04-                          | 165.79                      |
| 72000.00         | .0302833                | 00                     | .2081380                      | 04-                          | 155.71                      |
| 73000.00         | .7514611                | 00                     | .1668542                      | 04-                          | 156.90                      |
| 74000.00         | .6103471                | 00                     | .1297382                      | 04-                          | 163.89                      |
| 75000.00         | .5000913                | 00                     | .1019512                      | 04-                          | 170.88                      |

# FIGURE 17

## CHURCHILL, 4 MAY 1966, 0008 GMT.

| WIND DIRECTION<br>degrees | WIND SPEED<br>m/sec | ERROR<br>m/sec ( $\pm$ ) | TEMPERATURE<br>degrees Kelvin | ERROR<br>degrees Kelvin ( $\pm$ ) | HEIGHT<br>meters |
|---------------------------|---------------------|--------------------------|-------------------------------|-----------------------------------|------------------|
| 104.56                    | 2.08                | 1.87                     | 243.45                        | .61                               | 34267.95         |
| 314.97                    | 12.09               | 2.85                     | 262.01                        | .92                               | 40109.25         |
| 312.65                    | 7.04                | 6.83                     | 277.88                        | 2.23                              | 44499.15         |
| 219.12                    | 33.30               | 9.66                     | 281.41                        | 2.82                              | 48159.59         |
| 269.47                    | 2.71                | 4.14                     | 274.45                        | 2.03                              | 51732.20         |
| 324.48                    | 14.61               | 4.34                     | 266.05                        | 1.07                              | 55207.65         |
| 342.58                    | 20.05               | 6.78                     | 258.70                        | 1.52                              | 58596.50         |
| 340.25                    | 17.56               | 9.98                     | 255.86                        | 2.02                              | 61897.85         |
| 49.26                     | .62                 | 8.80                     | 239.73                        | 1.29                              | 65623.79         |
| 178.73                    | 10.66               | 5.81                     | 228.51                        | 1.06                              | 69750.04         |
| 119.66                    | 33.70               | 7.32                     | 213.12                        | 1.16                              | 73715.45         |
| 120.17                    | 40.76               | 6.97                     | 191.79                        | 1.00                              | 77553.30         |
| 45.21                     | 21.04               | 13.33                    | 192.13                        | 2.06                              | 81232.64         |
| 44.11                     | 31.69               | 22.25                    | 182.15                        | 3.38                              | 84302.14         |
| 13.89                     | 65.34               | 27.34                    | 169.33                        | 3.93                              | 86836.69         |
| 109.78                    | 54.62               | 45.78                    | 155.93                        | 4.84                              | 89288.44         |
| 155.82                    | 36.38               | 90.93                    | 145.95                        | 6.66                              | 91654.14         |
| 310.44                    | 76.20               | 41.09                    | 171.73                        | 9.17                              | 93881.94         |



WIND COMPONENTS  
m/sec

| HEIGHT<br>meters | SOUTH<br>component (+) | WEST<br>component (+) |
|------------------|------------------------|-----------------------|
| 35000.00         | -.61                   | -.68                  |
| 40000.00         | -8.37                  | 8.35                  |
| 45000.00         | -.58                   | 7.34                  |
| 50000.00         | 12.54                  | 11.58                 |
| 55000.00         | -11.18                 | 8.14                  |
| 60000.00         | -18.02                 | 5.97                  |
| 65000.00         | -3.10                  | .60                   |
| 70000.00         | 11.03                  | -2.06                 |
| 75000.00         | 17.95                  | -31.27                |
| 80000.00         | -2.99                  | -21.73                |
| 85000.00         | -33.95                 | -20.30                |
| 90000.00         | 22.91                  | -40.41                |

### LEGEND

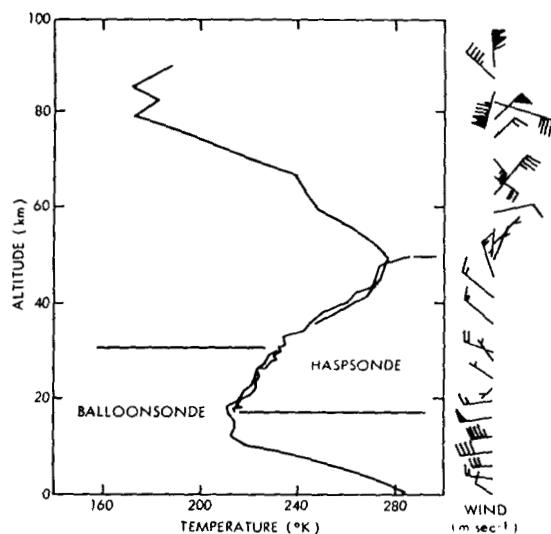
— 5 m/sec or less      ▲ 50 m/sec  
 — 10 m/sec      DIRECTION OF NORTH WIND ↓

| HEIGHT<br>meters | PRESSURE<br>mt/sq meter | DENSITY<br>kg./cu meter | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>(%) | DENSITY<br>deviation<br>(%) |       |       |
|------------------|-------------------------|-------------------------|-------------------------------|------------------------------|-----------------------------|-------|-------|
| 29000.00         | .1408798                | 04                      | .2145585                      | 01-                          | 228.75                      | 1.32  | .10-  |
| 30000.00         | .1215897                | 04                      | .1820477                      | 01-                          | 231.53                      | 1.57  | .62-  |
| 31000.00         | .1051296                | 04                      | .1562393                      | 01-                          | 234.32                      | 1.94  | 1.02- |
| 32000.00         | .9105968                | 03                      | .1337876                      | 01-                          | 237.11                      | 2.42  | 1.30- |
| 33000.00         | .7900788                | 03                      | .1147317                      | 01-                          | 239.90                      | 2.96  | .86-  |
| 34000.00         | .6866721                | 03                      | .9856934                      | 02-                          | 242.69                      | 3.50  | .30-  |
| 35000.00         | .5978308                | 03                      | .8474317                      | 02-                          | 245.77                      | 4.04  | .12   |
| 36000.00         | .5214180                | 03                      | .7226804                      | 02-                          | 248.94                      | 4.59  | .53   |
| 37000.00         | .4555808                | 03                      | .6295108                      | 02-                          | 252.12                      | 5.15  | .95   |
| 38000.00         | .3987467                | 03                      | .5441203                      | 02-                          | 255.30                      | 5.73  | 1.39  |
| 39000.00         | .3495928                | 03                      | .4711810                      | 02-                          | 258.48                      | 6.31  | 1.83  |
| 40000.00         | .3070037                | 03                      | .4087510                      | 02-                          | 261.66                      | 6.91  | 2.29  |
| 41000.00         | .2700625                | 03                      | .3547310                      | 02-                          | 265.22                      | 7.53  | 2.63  |
| 42000.00         | .2379856                | 03                      | .3083975                      | 02-                          | 268.84                      | 8.19  | 2.97  |
| 43000.00         | .2100813                | 03                      | .2686258                      | 02-                          | 272.45                      | 8.87  | 3.36  |
| 44000.00         | .1857609                | 03                      | .2344182                      | 02-                          | 276.07                      | 9.59  | 3.77  |
| 45000.00         | .1647778                | 03                      | .2058546                      | 02-                          | 278.35                      | 10.31 | 4.69  |
| 46000.00         | .1457421                | 03                      | .1817756                      | 02-                          | 279.32                      | 10.96 | 6.04  |
| 47000.00         | .1291995                | 03                      | .1605881                      | 02-                          | 280.28                      | 11.52 | 7.30  |
| 48000.00         | .1145861                | 03                      | .1419358                      | 02-                          | 281.25                      | 12.01 | 7.79  |
| 49000.00         | .1016181                | 03                      | .1265392                      | 02-                          | 279.77                      | 12.48 | 8.82  |
| 50000.00         | .9005453                | 02                      | .1129256                      | 02-                          | 277.82                      | 12.88 | 9.96  |
| 51000.00         | .7974202                | 02                      | .1006997                      | 02-                          | 275.87                      | 13.17 | 11.03 |
| 52000.00         | .7055045                | 02                      | .8976678                      | 03-                          | 273.80                      | 13.37 | 12.07 |
| 53000.00         | .6235779                | 02                      | .8004915                      | 03-                          | 271.38                      | 13.47 | 12.70 |
| 54000.00         | .5505780                | 02                      | .7131313                      | 03-                          | 268.97                      | 13.54 | 12.95 |
| 55000.00         | .4855771                | 02                      | .6346677                      | 03-                          | 266.55                      | 13.58 | 13.18 |
| 56000.00         | .4278327                | 02                      | .5638683                      | 03-                          | 264.33                      | 13.61 | 13.71 |
| 57000.00         | .3765568                | 02                      | .5003952                      | 03-                          | 262.16                      | 13.62 | 13.41 |
| 58000.00         | .3310882                | 02                      | .4436443                      | 03-                          | 259.99                      | 13.63 | 13.50 |
| 59000.00         | .2908464                | 02                      | .3921280                      | 03-                          | 258.35                      | 13.63 | 13.37 |
| 60000.00         | .2553453                | 02                      | .3454774                      | 03-                          | 257.49                      | 13.68 | 12.93 |
| 61000.00         | .2240890                | 02                      | .3042055                      | 03-                          | 256.63                      | 13.79 | 12.55 |
| 62000.00         | .1965626                | 02                      | .2681074                      | 03-                          | 255.41                      | 13.97 | 12.03 |
| 63000.00         | .1721770                | 02                      | .2388541                      | 03-                          | 251.09                      | 14.21 | 12.41 |
| 64000.00         | .1504759                | 02                      | .2124462                      | 03-                          | 246.76                      | 14.42 | 12.78 |
| 65000.00         | .1312026                | 02                      | .1885425                      | 03-                          | 242.43                      | 14.62 | 13.13 |
| 66000.00         | .1141407                | 02                      | .1665820                      | 03-                          | 238.71                      | 14.82 | 13.22 |
| 67000.00         | .9911460                | 01                      | .1463187                      | 03-                          | 235.99                      | 15.07 | 12.86 |
| 68000.00         | .8592974                | 01                      | .1283330                      | 03-                          | 233.27                      | 15.42 | 12.58 |
| 69000.00         | .7437759                | 01                      | .1123002                      | 03-                          | 230.55                      | 15.86 | 12.39 |
| 70000.00         | .6426520                | 01                      | .9830407                      | 04-                          | 227.54                      | 16.41 | 12.40 |
| 71000.00         | .5540636                | 01                      | .8630321                      | 04-                          | 223.66                      | 17.01 | 12.90 |
| 72000.00         | .4764700                | 01                      | .7552800                      | 04-                          | 219.77                      | 17.64 | 13.41 |
| 73000.00         | .4086621                | 01                      | .6504436                      | 04-                          | 215.89                      | 18.30 | 13.96 |
| 74000.00         | .3494847                | 01                      | .5755722                      | 04-                          | 211.53                      | 18.97 | 14.76 |
| 75000.00         | .2977820                | 01                      | .5036529                      | 04-                          | 205.98                      | 19.57 | 16.18 |
| 76000.00         | .2526324                | 01                      | .4391365                      | 04-                          | 200.42                      | 20.04 | 17.54 |
| 77000.00         | .2133509                | 01                      | .3814314                      | 04-                          | 194.86                      | 20.36 | 18.82 |
| 78000.00         | .1795130                | 01                      | .3260103                      | 04-                          | 191.83                      | 20.66 | 18.55 |
| 79000.00         | .1508518                | 01                      | .2738268                      | 04-                          | 191.92                      | 21.24 | 16.57 |
| 80000.00         | .1267843                | 01                      | .2300284                      | 04-                          | 192.01                      | 22.30 | 15.07 |
| 81000.00         | .1065716                | 01                      | .1932625                      | 04-                          | 192.11                      | 23.62 | 16.28 |
| 82000.00         | .8948799                | 00                      | .1643993                      | 04-                          | 189.63                      | 24.82 | 18.95 |
| 83000.00         | .7494726                | 00                      | .1400888                      | 04-                          | 186.38                      | 25.69 | 21.81 |
| 84000.00         | .6257711                | 00                      | .1190440                      | 04-                          | 183.13                      | 26.18 | 24.48 |
| 85000.00         | .5204949                | 00                      | .1015181                      | 04-                          | 178.62                      | 26.18 | 27.61 |
| 86000.00         | .4307920                | 00                      | .8647097                      | 05-                          | 173.56                      | 25.54 | 30.68 |
| 87000.00         | .3545671                | 00                      | .7333601                      | 05-                          | 168.43                      | 24.21 | 33.24 |
| 88000.00         | .2930764                | 00                      | .6200076                      | 05-                          | 162.97                      | 22.14 | 35.40 |
| 89000.00         | .2356449                | 00                      | .5212150                      | 05-                          | 157.50                      | 19.27 | 36.80 |
| 90000.00         | .1901851                | 00                      | .4332595                      | 05-                          | 152.92                      | 15.69 | 36.67 |
| 91000.00         | .1525492                | 00                      | .3573826                      | 05-                          | 148.70                      | 11.36 | 37.56 |
| 92000.00         | .1221025                | 00                      | .2836837                      | 05-                          | 149.95                      | 6.64  | 32.74 |
| 93000.00         | .9862885                | 01-                     | .2127283                      | 05-                          | 161.52                      | 2.76  | 20.66 |

# FIGURE 18

## WALLOPS ISLAND, 4 MAY 1966, 0037 GMT.

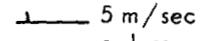
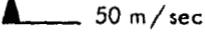
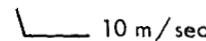
| WIND DIRECTION<br>degrees | WIND SPEED<br>m/sec | ERROR<br>m/sec ( $\pm$ ) | TEMPERATURE<br>degrees Kelvin | ERROR<br>degrees Kelvin ( $\pm$ ) | HEIGHT<br>meters |
|---------------------------|---------------------|--------------------------|-------------------------------|-----------------------------------|------------------|
| 309.76                    | 16.70               | .75                      | 247.50                        | .54                               | 35962.35         |
| 308.45                    | 15.82               | 1.00                     | 267.58                        | .60                               | 41581.94         |
| 342.11                    | 16.92               | 2.06                     | 273.50                        | .85                               | 45792.10         |
| 27.24                     | 3.24                | 1.39                     | 276.75                        | 1.17                              | 49295.25         |
| 40.52                     | 5.14                | 1.23                     | 270.91                        | .80                               | 52715.94         |
| 183.58                    | 5.53                | 1.88                     | 260.71                        | .73                               | 56032.29         |
| 78.62                     | 8.70                | 1.13                     | 248.56                        | .52                               | 59267.69         |
| 36.89                     | 36.72               | 1.26                     | 242.70                        | .44                               | 62926.00         |
| 121.75                    | 29.52               | 1.22                     | 239.70                        | .41                               | 66960.45         |
| 142.66                    | 23.94               | 1.60                     | 217.52                        | .47                               | 70844.04         |
| 48.21                     | 12.58               | 1.55                     | 195.75                        | .51                               | 75045.69         |
| 47.54                     | 51.25               | 2.21                     | 173.04                        | .66                               | 79071.05         |
| 105.03                    | 42.61               | 1.99                     | 182.89                        | .54                               | 82447.15         |
| 196.20                    | 135.20              | 6.75                     | 171.58                        | 1.59                              | 85285.40         |
| 313.66                    | 46.49               | 10.72                    | 179.25                        | 2.20                              | 87621.60         |
| 355.60                    | 111.80              | 8.34                     | 187.99                        | 1.93                              | 89866.65         |



WIND COMPONENTS  
m/sec

| HEIGHT<br>meters | SOUTH<br>component (+) | WEST<br>component (+) |
|------------------|------------------------|-----------------------|
| 40000.00         | -10.07                 | 12.51                 |
| 45000.00         | -14.92                 | 6.55                  |
| 50000.00         | -3.09                  | -1.86                 |
| 55000.00         | 2.59                   | -.80                  |
| 60000.00         | -7.25                  | -11.23                |
| 65000.00         | -6.28                  | -23.61                |
| 70000.00         | 18.27                  | -16.82                |
| 75000.00         | -8.08                  | -9.43                 |
| 80000.00         | -22.03                 | -38.73                |
| 85000.00         | 117.88                 | 29.79                 |

### LEGEND

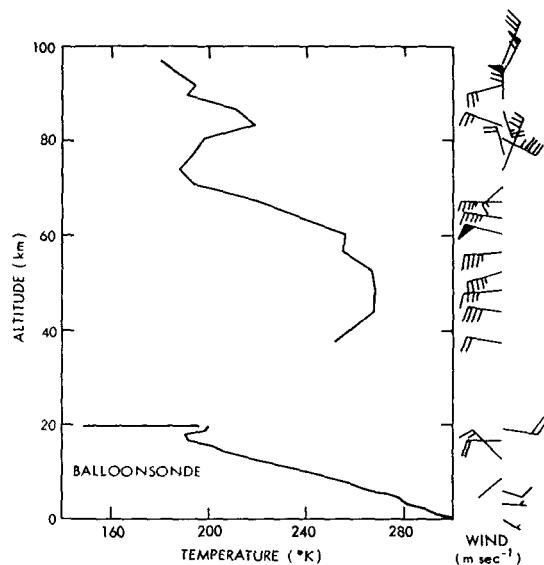
 5 m/sec or less  
  50 m/sec  
 10 m/sec NORTH WIND

| HEIGHT<br>meters | PRESSURE<br>nt/sq meter | DENSITY<br>kg/cu meter | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>(%) | DENSITY<br>deviation<br>(%) |
|------------------|-------------------------|------------------------|-------------------------------|------------------------------|-----------------------------|
| 30000.00         | .1224265                | 04                     | .1837077                      | 01-                          | 232.17                      |
| 31000.00         | .1059170                | 04                     | .1571930                      | 01-                          | 234.74                      |
| 32000.00         | .9178263                | 03                     | .1347398                      | 01-                          | 237.31                      |
| 33000.00         | .7966089                | 03                     | .1156910                      | 01-                          | 239.88                      |
| 34000.00         | .6924761                | 03                     | .9950110                      | 02-                          | 242.45                      |
| 35000.00         | .6028722                | 03                     | .8571679                      | 02-                          | 245.02                      |
| 36000.00         | .5256505                | 03                     | .7394981                      | 02-                          | 247.63                      |
| 37000.00         | .4591180                | 03                     | .6367146                      | 02-                          | 251.21                      |
| 38000.00         | .4017903                | 03                     | .5493994                      | 02-                          | 254.78                      |
| 39000.00         | .3522688                | 03                     | .4750520                      | 02-                          | 258.35                      |
| 40000.00         | .3094566                | 03                     | .4116032                      | 02-                          | 261.92                      |
| 41000.00         | .2723207                | 03                     | .3573363                      | 02-                          | 265.49                      |
| 42000.00         | .2400094                | 03                     | .3118054                      | 02-                          | 268.16                      |
| 43000.00         | .2117428                | 03                     | .2736468                      | 02-                          | 269.57                      |
| 44000.00         | .1869345                | 03                     | .2403309                      | 02-                          | 270.98                      |
| 45000.00         | .1651458                | 03                     | .2112212                      | 02-                          | 272.38                      |
| 46000.00         | .1459923                | 03                     | .1858321                      | 02-                          | 273.69                      |
| 47000.00         | .1291300                | 03                     | .1638143                      | 02-                          | 274.62                      |
| 48000.00         | .1142668                | 03                     | .1444720                      | 02-                          | 275.54                      |
| 49000.00         | .1011597                | 03                     | .1274720                      | 02-                          | 276.47                      |
| 50000.00         | .8955925                | 02                     | .1132351                      | 02-                          | 275.54                      |
| 51000.00         | .7924576                | 02                     | .1008197                      | 02-                          | 273.83                      |
| 52000.00         | .7006857                | 02                     | .8970384                      | 03-                          | 272.12                      |
| 53000.00         | .6190375                | 02                     | .7986618                      | 03-                          | 270.03                      |
| 54000.00         | .5462694                | 02                     | .7128898                      | 03-                          | 266.95                      |
| 55000.00         | .4813769                | 02                     | .6355180                      | 03-                          | 263.88                      |
| 56000.00         | .4235822                | 02                     | .5658044                      | 03-                          | 260.81                      |
| 57000.00         | .3721152                | 02                     | .5042750                      | 03-                          | 257.08                      |
| 58000.00         | .3262941                | 02                     | .4487352                      | 03-                          | 253.32                      |
| 59000.00         | .2855662                | 02                     | .3986337                      | 03-                          | 249.56                      |
| 60000.00         | .2495352                | 02                     | .3514039                      | 03-                          | 247.39                      |
| 61000.00         | .2178343                | 02                     | .3087612                      | 03-                          | 245.78                      |
| 62000.00         | .1899999                | 02                     | .2710752                      | 03-                          | 244.18                      |
| 63000.00         | .1655826                | 02                     | .2377476                      | 03-                          | 242.63                      |
| 64000.00         | .1442092                | 02                     | .2078256                      | 03-                          | 241.74                      |
| 65000.00         | .1255357                | 02                     | .1815866                      | 03-                          | 240.84                      |
| 66000.00         | .1092285                | 02                     | .1585876                      | 03-                          | 239.95                      |
| 67000.00         | .9458933                | 01                     | .1385369                      | 03-                          | 238.87                      |
| 68000.00         | .8244759                | 01                     | .1231084                      | 03-                          | 233.31                      |
| 69000.00         | .7132120                | 01                     | .1090922                      | 03-                          | 227.76                      |
| 70000.00         | .6147870                | 01                     | .9638816                      | 04-                          | 222.20                      |
| 71000.00         | .5279917                | 01                     | .8487990                      | 04-                          | 216.71                      |
| 72000.00         | .4517545                | 01                     | .7440322                      | 04-                          | 211.52                      |
| 73000.00         | .3850521                | 01                     | .6501013                      | 04-                          | 206.34                      |
| 74000.00         | .3268839                | 01                     | .5661109                      | 04-                          | 201.16                      |
| 75000.00         | .2763337                | 01                     | .4912205                      | 04-                          | 195.98                      |
| 76000.00         | .2325179                | 01                     | .4255353                      | 04-                          | 190.36                      |
| 77000.00         | .1946487                | 01                     | .3671091                      | 04-                          | 184.72                      |
| 78000.00         | .1620602                | 01                     | .3152752                      | 04-                          | 179.07                      |
| 79000.00         | .1341465                | 01                     | .2694598                      | 04-                          | 173.43                      |
| 80000.00         | .1138488                | 01                     | .2197350                      | 04-                          | 175.74                      |
| 81000.00         | .9186062                | 00                     | .1791207                      | 04-                          | 178.66                      |
| 82000.00         | .7636151                | 00                     | .1465758                      | 04-                          | 181.58                      |
| 83000.00         | .6354669                | 00                     | .1225260                      | 04-                          | 180.68                      |
| 84000.00         | .5275250                | 00                     | .1040076                      | 04-                          | 176.62                      |
| 85000.00         | .4360879                | 00                     | .8796418                      | 05-                          | 172.71                      |
| 86000.00         | .3529751                | 00                     | .7210586                      | 05-                          | 173.92                      |
| 87000.00         | .2978936                | 00                     | .5856393                      | 05-                          | 177.21                      |
| 88000.00         | .2474210                | 00                     | .4769507                      | 05-                          | 180.72                      |
| 89000.00         | .2062867                | 00                     | .3892704                      | 05-                          | 184.61                      |

# FIGURE 19

## NATAL, 4 MAY 1966, 0120 GMT.

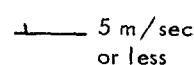
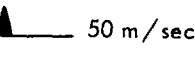
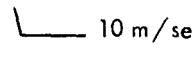
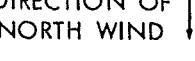
| WIND DIRECTION<br>degrees | WIND SPEED<br>m/sec | ERROR<br>m/sec ( $\pm$ ) | TEMPERATURE<br>degrees Kelvin | ERROR<br>degrees Kelvin ( $\pm$ ) | HEIGHT<br>meters |
|---------------------------|---------------------|--------------------------|-------------------------------|-----------------------------------|------------------|
| 280.34                    | 21.32               | 3.25                     | 251.61                        | .85                               | 37783.60         |
| 277.79                    | 41.23               | 14.82                    | 267.25                        | 4.61                              | 44029.75         |
| 260.52                    | 33.03               | 28.20                    | 268.30                        | 8.54                              | 48727.04         |
| 245.86                    | 42.91               | 20.28                    | 266.77                        | 6.04                              | 52625.25         |
| 263.72                    | 44.96               | 9.27                     | 255.16                        | 2.93                              | 56429.35         |
| 287.51                    | 51.51               | 5.31                     | 255.58                        | 2.03                              | 60133.20         |
| 282.89                    | 44.36               | 14.39                    | 237.49                        | 5.25                              | 63738.40         |
| 270.95                    | 43.86               | 18.92                    | 218.65                        | 5.81                              | 67247.90         |
| 239.77                    | 14.47               | 12.58                    | 194.22                        | 4.36                              | 70656.45         |
| 12.26                     | 30.76               | 12.31                    | 188.28                        | 3.65                              | 73997.95         |
| 347.00                    | 20.95               | 8.62                     | 194.53                        | 2.78                              | 77210.40         |
| 126.05                    | 47.11               | 7.90                     | 197.83                        | 2.47                              | 80325.20         |
| 293.92                    | 23.94               | 10.04                    | 218.51                        | 5.00                              | 83365.15         |
| 168.94                    | 24.15               | 24.35                    | 211.12                        | 8.07                              | 86283.74         |
| .51                       | 71.02               | 30.53                    | 191.07                        | 9.32                              | 89116.54         |
| 256.41                    | 26.53               | 58.96                    | 193.85                        | 22.97                             | 91854.59         |
| 21.26                     | 57.32               | 84.35                    | 186.34                        | 27.29                             | 94497.14         |
| 18.65                     | 29.06               | 159.78                   | 180.08                        | 40.68                             | 96984.89         |



### WIND COMPONENTS m/sec

| HEIGHT<br>meters | SOUTH<br>component (+) | WEST<br>component (+) |
|------------------|------------------------|-----------------------|
| 40000.00         | -4.45                  | 28.02                 |
| 45000.00         | -3.30                  | 39.14                 |
| 50000.00         | 9.39                   | 34.72                 |
| 55000.00         | 9.66                   | 42.61                 |
| 60000.00         | -14.76                 | 48.96                 |
| 65000.00         | -6.60                  | 43.46                 |
| 70000.00         | 5.74                   | 18.54                 |
| 75000.00         | -27.04                 | -3.02                 |
| 80000.00         | 22.69                  | -33.62                |
| 85000.00         | 9.00                   | 7.03                  |
| 90000.00         | -46.09                 | 7.89                  |
| 95000.00         | -48.18                 | -18.46                |

### LEGEND

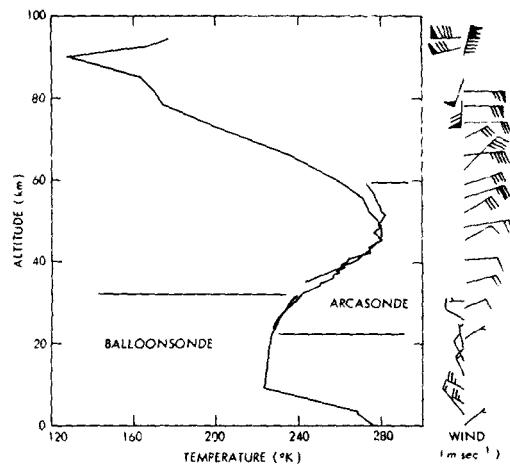
 5 m/sec or less  
 50 m/sec  
 10 m/sec  
 NORTH WIND

| HEIGHT<br>meters | PRESSURE<br>n./sq meter | DENSITY<br>kg./cu meter | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>(%) | DENSITY<br>deviation<br>(%) |
|------------------|-------------------------|-------------------------|-------------------------------|------------------------------|-----------------------------|
| 32000.00         | .9078919                | 03                      | .1338105                      | 01-                          | 236.37                      |
| 33000.00         | .7877824                | 03                      | .1146285                      | 01-                          | 239.00                      |
| 34000.00         | .684654                 | 03                      | .9870890                      | 02-                          | 241.61                      |
| 35000.00         | .595624                 | 03                      | .8499511                      | 02-                          | 244.27                      |
| 36000.00         | .5195527                | 03                      | .7330722                      | 02-                          | 246.91                      |
| 37000.00         | .4536188                | 03                      | .6332859                      | 02-                          | 249.54                      |
| 38000.00         | .3966307                | 03                      | .5480040                      | 02-                          | 252.15                      |
| 39000.00         | .3472661                | 03                      | .4751102                      | 02-                          | 254.65                      |
| 40000.00         | .3044884                | 03                      | .4125051                      | 02-                          | 257.15                      |
| 41000.00         | .2673160                | 03                      | .3586544                      | 02-                          | 259.66                      |
| 42000.00         | .2342814                | 03                      | .3122650                      | 02-                          | 262.16                      |
| 43000.00         | .2068248                | 03                      | .2722448                      | 02-                          | 264.66                      |
| 44000.00         | .1822658                | 03                      | .2376636                      | 02-                          | 267.17                      |
| 45000.00         | .1607361                | 03                      | .2093664                      | 02-                          | 267.46                      |
| 46000.00         | .1417726                | 03                      | .1845104                      | 02-                          | 267.68                      |
| 47000.00         | .1250640                | 03                      | .1626285                      | 02-                          | 267.91                      |
| 48000.00         | .1103406                | 03                      | .1433625                      | 02-                          | 268.13                      |
| 49000.00         | .9736226                | 02                      | .1264735                      | 02-                          | 268.19                      |
| 50000.00         | .8590522                | 02                      | .1117542                      | 02-                          | 267.80                      |
| 51000.00         | .7578561                | 02                      | .9873410                      | 03-                          | 267.40                      |
| 52000.00         | .6684842                | 02                      | .8721851                      | 03-                          | 267.01                      |
| 53000.00         | .5894272                | 02                      | .7730593                      | 03-                          | 265.62                      |
| 54000.00         | .5191902                | 02                      | .6888564                      | 03-                          | 262.57                      |
| 55000.00         | .4566629                | 02                      | .6130223                      | 03-                          | 259.52                      |
| 56000.00         | .4010727                | 02                      | .5448063                      | 03-                          | 256.47                      |
| 57000.00         | .3512806                | 02                      | .4803176                      | 03-                          | 255.22                      |
| 58000.00         | .3086478                | 02                      | .4211165                      | 03-                          | 255.34                      |
| 59000.00         | .2707519                | 02                      | .3692467                      | 03-                          | 255.45                      |
| 60000.00         | .2375331                | 02                      | .3237988                      | 03-                          | 255.56                      |
| 61000.00         | .2081696                | 02                      | .2886675                      | 03-                          | 251.23                      |
| 62000.00         | .1819913                | 02                      | .2575099                      | 03-                          | 246.21                      |
| 63000.00         | .1586720                | 02                      | .2291855                      | 03-                          | 241.19                      |
| 64000.00         | .1379447                | 02                      | .2035598                      | 03-                          | 236.08                      |
| 65000.00         | .1195540                | 02                      | .1805267                      | 03-                          | 230.71                      |
| 66000.00         | .1032713                | 02                      | .1596551                      | 03-                          | 225.34                      |
| 67000.00         | .8889591                | 01                      | .1407853                      | 03-                          | 219.98                      |
| 68000.00         | .7620545                | 01                      | .1244914                      | 03-                          | 213.25                      |
| 69000.00         | .6490721                | 01                      | .1098743                      | 03-                          | 206.09                      |
| 70000.00         | .5512894                | 01                      | .9655053                      | 04-                          | 198.92                      |
| 71000.00         | .4651747                | 01                      | .8370575                      | 04-                          | 193.60                      |
| 72000.00         | .3913112                | 01                      | .7106699                      | 04-                          | 191.82                      |
| 73000.00         | .3286645                | 01                      | .6024794                      | 04-                          | 190.05                      |
| 74000.00         | .2756109                | 01                      | .5099762                      | 04-                          | 188.27                      |
| 75000.00         | .2311529                | 01                      | .4233391                      | 04-                          | 190.22                      |
| 76000.00         | .1942241                | 01                      | .3521057                      | 04-                          | 192.17                      |
| 77000.00         | .1634900                | 01                      | .2934181                      | 04-                          | 194.11                      |
| 78000.00         | .1378212                | 01                      | .2457710                      | 04-                          | 195.36                      |
| 79000.00         | .1163057                | 01                      | .2062830                      | 04-                          | 196.42                      |
| 80000.00         | .9824390                | 00                      | .1733119                      | 04-                          | 197.48                      |
| 81000.00         | .8320068                | 00                      | .1431961                      | 04-                          | 202.42                      |
| 82000.00         | .7079900                | 00                      | .1178898                      | 04-                          | 209.22                      |
| 83000.00         | .6056062                | 00                      | .9766629                      | 05-                          | 216.02                      |
| 84000.00         | .5194974                | 00                      | .8344051                      | 05-                          | 216.90                      |
| 85000.00         | .4453902                | 00                      | .7238188                      | 05-                          | 214.37                      |
| 86000.00         | .3811758                | 00                      | .6268600                      | 05-                          | 211.84                      |
| 87000.00         | .3252233                | 00                      | .5498739                      | 05-                          | 206.05                      |
| 88000.00         | .2760997                | 00                      | .4834337                      | 05-                          | 198.97                      |
| 89000.00         | .2330212                | 00                      | .4230643                      | 05-                          | 191.88                      |
| 90000.00         | .1960729                | 00                      | .3558456                      | 05-                          | 191.96                      |
| 91000.00         | .1650706                | 00                      | .2979994                      | 05-                          | 192.98                      |
| 92000.00         | .1390689                | 00                      | .2504657                      | 05-                          | 193.43                      |
| 93000.00         | .1170441                | 00                      | .2139427                      | 05-                          | 190.59                      |
| 94000.00         | .9825781                | 01-                     | .1823231                      | 05-                          | 187.75                      |
| 95000.00         | .8227794                | 01-                     | .1548815                      | 05-                          | 185.07                      |
| 96000.00         | .6872809                | 01-                     | .1311589                      | 05-                          | 182.55                      |

# FIGURE 20

## CHURCHILL, 17 JUNE 1966, 0313 GMT.

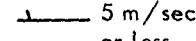
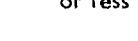
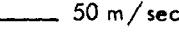
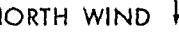
| WIND DIRECTION<br>degrees | WIND SPEED<br>m/sec | ERROR<br>m/sec ( $\pm$ ) | TEMPERATURE<br>degrees Kelvin | ERROR<br>degrees Kelvin ( $\pm$ ) | HEIGHT<br>meters |
|---------------------------|---------------------|--------------------------|-------------------------------|-----------------------------------|------------------|
| 70.87                     | 21.16               | 1.53                     | 243.19                        | .66                               | 35019.95         |
| 86.24                     | 11.73               | 2.33                     | 267.69                        | 1.18                              | 40874.50         |
| 61.42                     | 10.24               | 3.42                     | 278.85                        | 1.17                              | 45266.80         |
| 78.43                     | 18.65               | 4.38                     | 279.71                        | 1.40                              | 48923.95         |
| 59.05                     | 30.32               | 6.01                     | 274.44                        | 1.67                              | 52498.15         |
| 71.66                     | 36.76               | 8.51                     | 270.78                        | 2.09                              | 55975.90         |
| 69.30                     | 40.52               | 7.92                     | 261.21                        | 1.74                              | 59356.75         |
| 49.31                     | 33.57               | 8.76                     | 248.56                        | 1.62                              | 62658.40         |
| 80.07                     | 47.25               | 7.95                     | 235.22                        | 1.25                              | 66388.85         |
| 64.74                     | 31.41               | 8.68                     | 213.79                        | 1.06                              | 70508.80         |
| 88.82                     | 27.64               | 7.39                     | 192.79                        | .78                               | 74467.35         |
| 90.07                     | 69.76               | 5.43                     | 174.13                        | .43                               | 78293.15         |
| 88.91                     | 62.77               | 9.71                     | 169.59                        | .66                               | 81963.35         |
| 197.81                    | 47.84               | 17.57                    | 163.60                        | 1.19                              | 85038.30         |
| 181.12                    | 70.82               | 15.62                    | 147.29                        | 1.01                              | 87573.45         |
| 7.98                      | 191.57              | 10.26                    | 126.76                        | .62                               | 90017.20         |
| 259.07                    | 79.90               | 24.53                    | 164.69                        | 1.69                              | 92371.55         |
| 268.62                    | 129.35              | 28.74                    | 177.19                        | 2.21                              | 94594.49         |



WIND COMPONENTS  
m/sec

| HEIGHT<br>meters | SOUTH<br>component (+) | WEST<br>component (+) |
|------------------|------------------------|-----------------------|
| 40000.00         | -1.68                  | -12.94                |
| 45000.00         | -4.64                  | -9.15                 |
| 50000.00         | -7.30                  | -20.60                |
| 55000.00         | -12.69                 | -32.40                |
| 60000.00         | -15.79                 | -35.47                |
| 65000.00         | -13.26                 | -38.69                |
| 70000.00         | -12.75                 | -30.64                |
| 75000.00         | -.47                   | -33.50                |
| 80000.00         | -.51                   | -66.50                |
| 85000.00         | 44.96                  | 13.66                 |
| 90000.00         | -187.88                | -26.39                |

### LEGEND

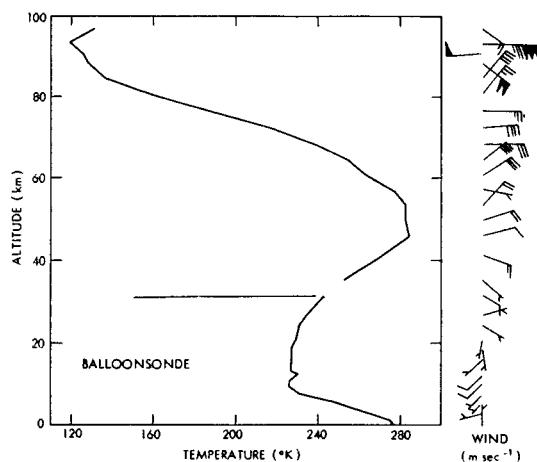
 5 m/sec or less  
 10 m/sec  
 50 m/sec  
 DIRECTION OF NORTH WIND

| HEIGHT<br>meters | PRESSURE<br>nt/sq meter |     | DENSITY<br>kg/cu meter | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>(%) | DENSITY<br>deviation<br>(%) |
|------------------|-------------------------|-----|------------------------|-------------------------------|------------------------------|-----------------------------|
| 30000.00         | .1298000                | 04  | .1920098               | 01-                           | 235.51                       | 8.43                        |
| 31000.00         | .1124604                | 04  | .1652855               | 01-                           | 237.04                       | 9.05                        |
| 32000.00         | .9753153                | 03  | .1424244               | 01-                           | 238.57                       | 9.70                        |
| 33000.00         | .8466524                | 03  | .1228476               | 01-                           | 240.10                       | 10.34                       |
| 34000.00         | .7356560                | 03  | .1060660               | 01-                           | 241.63                       | 10.89                       |
| 35000.00         | .6398063                | 03  | .9166573               | 02-                           | 243.16                       | 11.35                       |
| 36000.00         | .5573650                | 03  | .7852022               | 02-                           | 247.29                       | 11.80                       |
| 37000.00         | .4866849                | 03  | .6742221               | 02-                           | 251.48                       | 12.33                       |
| 38000.00         | .4295377                | 03  | .5804096               | 02-                           | 255.66                       | 12.84                       |
| 39000.00         | .3735958                | 03  | .5008876               | 02-                           | 259.84                       | 13.61                       |
| 40000.00         | .3283862                | 03  | .4332970               | 02-                           | 264.03                       | 14.36                       |
| 41000.00         | .2892309                | 03  | .3752683               | 02-                           | 268.01                       | 15.17                       |
| 42000.00         | .2551463                | 03  | .3285485               | 02-                           | 270.55                       | 15.99                       |
| 43000.00         | .2253510                | 03  | .2874827               | 02-                           | 273.09                       | 16.79                       |
| 44000.00         | .1929717                | 03  | .2516706               | 02-                           | 275.63                       | 17.56                       |
| 45000.00         | .1764161                | 03  | .2209462               | 02-                           | 278.17                       | 18.32                       |
| 46000.00         | .1563039                | 03  | .1951611               | 02-                           | 279.02                       | 19.00                       |
| 47000.00         | .1385226                | 03  | .1728138               | 02-                           | 279.25                       | 19.56                       |
| 48000.00         | .1227816                | 03  | .1530473               | 02-                           | 279.48                       | 20.02                       |
| 49000.00         | .1088419                | 03  | .1356204               | 02-                           | 279.59                       | 20.48                       |
| 50000.00         | .9645880                | 02  | .1208270               | 02-                           | 273.12                       | 20.90                       |
| 51000.00         | .8543302                | 02  | .1075852               | 02-                           | 276.65                       | 21.25                       |
| 52000.00         | .7562139                | 02  | .9573902               | 03-                           | 275.17                       | 21.52                       |
| 53000.00         | .6689848                | 02  | .8508604               | 03-                           | 273.91                       | 21.73                       |
| 54000.00         | .5915330                | 02  | .7552612               | 03-                           | 272.86                       | 21.98                       |
| 55000.00         | .5228184                | 02  | .6701186               | 03-                           | 271.80                       | 22.29                       |
| 56000.00         | .4618776                | 02  | .5944091               | 03-                           | 270.70                       | 22.65                       |
| 57000.00         | .4076873                | 02  | .5302113               | 03-                           | 267.87                       | 23.02                       |
| 58000.00         | .3593924                | 02  | .4723920               | 03-                           | 265.04                       | 23.34                       |
| 59000.00         | .3164027                | 02  | .4203733               | 03-                           | 262.21                       | 23.62                       |
| 60000.00         | .2781373                | 02  | .3744952               | 03-                           | 258.74                       | 23.83                       |
| 61000.00         | .2440615                | 02  | .3335535               | 03-                           | 254.91                       | 23.94                       |
| 62000.00         | .2137459                | 02  | .2965795               | 03-                           | 251.08                       | 23.94                       |
| 63000.00         | .1868266                | 02  | .2631527               | 03-                           | 247.33                       | 23.92                       |
| 64000.00         | .1629772                | 02  | .2329283               | 03-                           | 243.76                       | 23.93                       |
| 65000.00         | .1418916                | 02  | .2058126               | 03-                           | 240.18                       | 23.96                       |
| 66000.00         | .1232829                | 02  | .1815241               | 03-                           | 236.60                       | 24.01                       |
| 67000.00         | .1068578                | 02  | .1604375               | 03-                           | 232.03                       | 24.06                       |
| 68000.00         | .9234355                | 01  | .1418240               | 03-                           | 226.83                       | 24.03                       |
| 69000.00         | .7953471                | 01  | .1250177               | 03-                           | 221.63                       | 23.90                       |
| 70000.00         | .6826338                | 01  | .1098787               | 03-                           | 215.43                       | 23.65                       |
| 71000.00         | .5837372                | 01  | .9629687               | 04-                           | 211.18                       | 23.28                       |
| 72000.00         | .4972189                | 01  | .8413840               | 04-                           | 205.87                       | 22.76                       |
| 73000.00         | .4217748                | 01  | .7326014               | 04-                           | 200.57                       | 22.09                       |
| 74000.00         | .3562214                | 01  | .6355528               | 04-                           | 195.26                       | 21.26                       |
| 75000.00         | .2995068                | 01  | .5486311               | 04-                           | 190.18                       | 20.26                       |
| 76000.00         | .2506808                | 01  | .4712760               | 04-                           | 185.31                       | 19.11                       |
| 77000.00         | .2088329                | 01  | .4032130               | 04-                           | 180.43                       | 17.81                       |
| 78000.00         | .1731126                | 01  | .3435286               | 04-                           | 175.55                       | 16.36                       |
| 79000.00         | .1429588                | 01  | .2874620               | 04-                           | 173.25                       | 14.90                       |
| 80000.00         | .1178334                | 01  | .2386419               | 04-                           | 172.02                       | 13.67                       |
| 81000.00         | .9699435                | 00  | .1978593               | 04-                           | 170.78                       | 12.51                       |
| 82000.00         | .7973165                | 00  | .1638558               | 04-                           | 169.52                       | 11.21                       |
| 83000.00         | .6542297                | 00  | .1360139               | 04-                           | 167.57                       | 9.72                        |
| 84000.00         | .5356137                | 00  | .1126640               | 04-                           | 165.62                       | 8.00                        |
| 85000.00         | .4374939                | 00  | .9312065               | 05-                           | 163.67                       | 6.05                        |
| 86000.00         | .3555187                | 00  | .7868311               | 05-                           | 157.41                       | 3.61                        |
| 87000.00         | .2864639                | 00  | .6610221               | 05-                           | 150.97                       | .35                         |
| 88000.00         | .2285276                | 00  | .5540240               | 05-                           | 143.70                       | 3.76-                       |
| 89000.00         | .1800181                | 00  | .4635190               | 05-                           | 135.30                       | 8.88-                       |
| 90000.00         | .1396637                | 00  | .3834190               | 05-                           | 126.90                       | 15.03-                      |
| 91000.00         | .1090888                | 00  | .2665302               | 05-                           | 142.59                       | 20.36-                      |
| 92000.00         | .8746800                | 01- | .1920109               | 05-                           | 158.70                       | 23.60-                      |
| 93000.00         | .7137171                | 01- | .1478080               | 05-                           | 168.22                       | 25.63-                      |
| 94000.00         | .5877014                | 01- | .1177717               | 05-                           | 173.85                       | 27.16-                      |

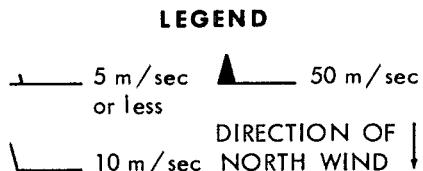
# FIGURE 21

## BARROW, 17 JUNE 1966, 0318 GMT.

| WIND DIRECTION<br>degrees | WIND SPEED<br>m/sec | ERROR<br>m/sec ( $\pm$ ) | TEMPERATURE<br>degrees Kelvin | ERROR<br>degrees Kelvin ( $\pm$ ) | HEIGHT<br>meters |
|---------------------------|---------------------|--------------------------|-------------------------------|-----------------------------------|------------------|
| 124.58                    | 6.87                | 2.34                     | 251.72                        | .47                               | 35438.30         |
| 104.88                    | 13.92               | 3.70                     | 272.11                        | .84                               | 41526.80         |
| 78.39                     | 9.81                | 4.03                     | 284.03                        | .98                               | 46117.00         |
| 69.94                     | 22.22               | 2.44                     | 281.61                        | .60                               | 49940.55         |
| 40.78                     | 22.43               | 5.76                     | 281.67                        | 1.34                              | 53664.55         |
| 102.96                    | 6.17                | 7.60                     | 276.58                        | 1.41                              | 57304.45         |
| 59.00                     | 27.70               | 3.37                     | 263.49                        | .72                               | 60854.70         |
| 51.04                     | 37.95               | 4.37                     | 254.92                        | .87                               | 64316.04         |
| 89.39                     | 30.89               | 3.28                     | 238.22                        | .71                               | 68239.24         |
| 81.47                     | 41.07               | 3.83                     | 215.50                        | .63                               | 72584.65         |
| 91.28                     | 24.79               | 7.91                     | 185.95                        | 1.05                              | 76775.04         |
| 27.18                     | 22.74               | 10.87                    | 160.07                        | 1.25                              | 80840.10         |
| 29.71                     | 41.48               | 15.34                    | 136.86                        | 1.47                              | 84743.50         |
| 124.76                    | 97.69               | 22.51                    | 128.56                        | 2.02                              | 88019.10         |
| 265.67                    | 48.73               | 43.52                    | 125.77                        | 3.64                              | 90726.24         |
| 93.08                     | 172.74              | 34.68                    | 119.23                        | 3.40                              | 93332.40         |
| 122.87                    | 13.54               | 77.20                    | 131.22                        | 5.22                              | 96988.90         |



| HEIGHT<br>meters | WIND COMPONENTS<br>m/sec |                       |
|------------------|--------------------------|-----------------------|
|                  | SOUTH<br>component (+)   | WEST<br>component (+) |
| 40000.00         | 3.65                     | -11.49                |
| 45000.00         | -.62                     | -10.54                |
| 50000.00         | -7.77                    | -20.76                |
| 55000.00         | -10.24                   | -11.48                |
| 60000.00         | -10.50                   | -19.47                |
| 65000.00         | -19.75                   | -29.75                |
| 70000.00         | -2.66                    | -34.83                |
| 75000.00         | -2.26                    | -31.49                |
| 80000.00         | -15.93                   | -13.36                |
| 85000.00         | -28.84                   | -25.23                |
| 90000.00         | 17.63                    | 14.02                 |
| 95000.00         | 8.39                     | -99.01                |

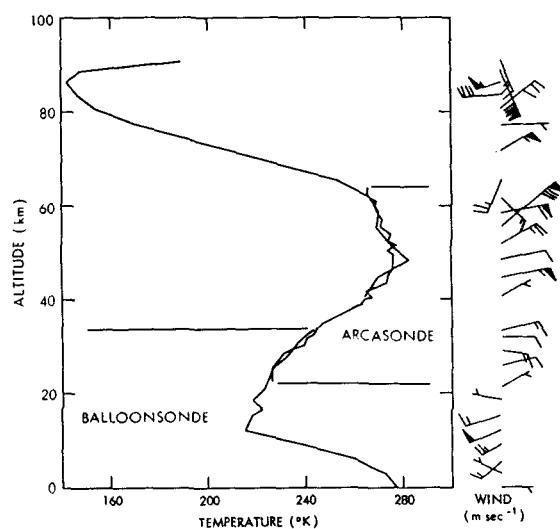


| HEIGHT<br>met ers | PRESSURE<br>nt/sq meter |     | DENSITY<br>kg/cu meter | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>(%) | DENSITY<br>deviation<br>(%) |
|-------------------|-------------------------|-----|------------------------|-------------------------------|------------------------------|-----------------------------|
| 31000.00          | .1172377                | 04  | .1695535               | 21-                           | 240.89                       | 13.68                       |
| 32000.00          | .1019176                | 04  | .1450221               | 01-                           | 243.33                       | 14.62                       |
| 33000.00          | .8673072                | 03  | .1257780               | 01-                           | 245.76                       | 15.63                       |
| 34000.00          | .7735761                | 03  | .1085786               | 01-                           | 248.20                       | 16.60                       |
| 35000.00          | .6753565                | 03  | .9286994               | 02-                           | 250.64                       | 17.53                       |
| 36000.00          | .5904885                | 03  | .8111896               | 02-                           | 253.50                       | 18.44                       |
| 37000.00          | .5171629                | 03  | .7011969               | 02-                           | 256.34                       | 19.36                       |
| 38000.00          | .4527797                | 03  | .6072883               | 02-                           | 260.29                       | 20.31                       |
| 39000.00          | .3987770                | 03  | .5269456               | 02-                           | 263.64                       | 21.27                       |
| 40000.00          | .3510578                | 03  | .4586700               | 02-                           | 266.29                       | 22.25                       |
| 41000.00          | .3095524                | 03  | .3989265               | 02-                           | 270.34                       | 23.26                       |
| 42000.00          | .2733659                | 03  | .3481184               | 02-                           | 273.33                       | 24.27                       |
| 43000.00          | .2417245                | 03  | .3051900               | 02-                           | 275.93                       | 25.27                       |
| 44000.00          | .2140002                | 03  | .2675672               | 02-                           | 278.53                       | 26.25                       |
| 45000.00          | .1896771                | 03  | .2350526               | 02-                           | 281.13                       | 27.21                       |
| 46000.00          | .1683115                | 03  | .2066615               | 02-                           | 283.72                       | 28.15                       |
| 47000.00          | .1494374                | 03  | .1836195               | 02-                           | 283.47                       | 28.98                       |
| 48000.00          | .1326491                | 03  | .1633899               | 02-                           | 282.83                       | 29.67                       |
| 49000.00          | .1177252                | 03  | .1453327               | 02-                           | 282.29                       | 30.31                       |
| 50000.00          | .1044567                | 03  | .1292251               | 02-                           | 281.61                       | 30.93                       |
| 51000.00          | .9267200                | 02  | .1146475               | 02-                           | 281.62                       | 31.53                       |
| 52000.00          | .8223231                | 02  | .1017181               | 02-                           | 281.64                       | 32.14                       |
| 53000.00          | .7296587                | 02  | .9025025               | 03-                           | 281.66                       | 32.77                       |
| 54000.00          | .6473868                | 02  | .8020451               | 03-                           | 281.20                       | 33.50                       |
| 55000.00          | .5741858                | 02  | .7149151               | 03-                           | 279.80                       | 30.30                       |
| 56000.00          | .5089748                | 02  | .6369071               | 03-                           | 278.40                       | 35.16                       |
| 57000.00          | .4509128                | 02  | .5671021               | 03-                           | 277.00                       | 36.06                       |
| 58000.00          | .3991038                | 02  | .5074226               | 03-                           | 274.01                       | 36.97                       |
| 59000.00          | .3527321                | 02  | .4545838               | 03-                           | 270.32                       | 37.81                       |
| 60000.00          | .3112320                | 02  | .4066484               | 03-                           | 266.63                       | 38.56                       |
| 61000.00          | .2741586                | 02  | .3629897               | 03-                           | 263.12                       | 39.22                       |
| 62000.00          | .2411615                | 02  | .3223312               | 03-                           | 260.65                       | 39.83                       |
| 63000.00          | .2118850                | 02  | .2859143               | 03-                           | 258.18                       | 40.55                       |
| 64000.00          | .1859384                | 02  | .2533295               | 03-                           | 255.70                       | 41.39                       |
| 65000.00          | .1629169                | 02  | .2252176               | 03-                           | 252.01                       | 42.33                       |
| 66000.00          | .1424517                | 02  | .2003105               | 03-                           | 247.75                       | 43.30                       |
| 67000.00          | .1242730                | 02  | .1778039               | 03-                           | 243.49                       | 44.28                       |
| 68000.00          | .1081580                | 02  | .1575014               | 03-                           | 239.23                       | 45.27                       |
| 69000.00          | .9388150                | 01  | .1326280               | 03-                           | 234.24                       | 46.25                       |
| 70000.00          | .8123879                | 01  | .1235876               | 03-                           | 229.01                       | 47.16                       |
| 71000.00          | .7006737                | 01  | .1090799               | 03-                           | 223.78                       | 47.27                       |
| 72000.00          | .6022368                | 01  | .0599904               | 04-                           | 218.55                       | 48.69                       |
| 73000.00          | .5156233                | 01  | .8452666               | 04-                           | 212.56                       | 49.26                       |
| 74000.00          | .4393514                | 01  | .7447693               | 04-                           | 205.51                       | 49.56                       |
| 75000.00          | .3722943                | 01  | .6535221               | 04-                           | 198.46                       | 49.40                       |
| 76000.00          | .3136040                | 01  | .5707758               | 04-                           | 191.41                       | 49.01                       |
| 77000.00          | .2625039                | 01  | .4956308               | 04-                           | 184.51                       | 48.09                       |
| 78000.00          | .2183184                | 01  | .4269362               | 04-                           | 178.14                       | 46.74                       |
| 79000.00          | .1803672                | 01  | .3657927               | 04-                           | 171.78                       | 44.96                       |
| 80000.00          | .1479512                | 01  | .3116006               | 04-                           | 165.41                       | 42.72                       |
| 81000.00          | .1204539                | 01  | .2636882               | 04-                           | 159.11                       | 39.70                       |
| 82000.00          | .9725323                | 00  | .2211999               | 04-                           | 153.17                       | 35.65                       |
| 83000.00          | .7787764                | 00  | .1812840               | 04-                           | 147.22                       | 30.61                       |
| 84000.00          | .6179801                | 00  | .1523885               | 04-                           | 141.27                       | 24.61                       |
| 85000.00          | .0859419                | 00  | .1242895               | 04-                           | 136.20                       | 17.80                       |
| 86000.00          | .3795732                | 00  | .9892280               | 05-                           | 133.67                       | 10.62                       |
| 87000.00          | .2951131                | 00  | .7839634               | 05-                           | 131.14                       | 3.39                        |
| 88000.00          | .2283413                | 00  | .6185293               | 05-                           | 128.61                       | 3.84-                       |
| 89000.00          | .1760577                | 00  | .4808725               | 05-                           | 127.55                       | 10.88-                      |
| 90000.00          | .1354659                | 00  | .3730232               | 05-                           | 126.51                       | 17.59-                      |
| 91000.00          | .1039735                | 00  | .2895933               | 05-                           | 125.08                       | 24.09-                      |
| 92000.00          | .7947277                | 01- | .2258821               | 05-                           | 123.57                       | 30.58-                      |
| 93000.00          | .6041404                | 01- | .1752996               | 05-                           | 120.06                       | 37.05-                      |
| 94000.00          | .4587006                | 01- | .1316124               | 05-                           | 121.42                       | 43.14-                      |
| 95000.00          | .3501091                | 01- | .9781318               | 06-                           | 124.70                       | 48.52-                      |
| 96000.00          | .2691277                | 01- | .7326211               | 06-                           | 127.97                       | 53.18-                      |

# FIGURE 22

## CHURCHILL, 23 JUNE 1966, 0635 GMT.

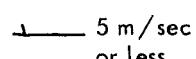
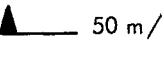
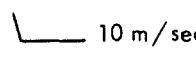
| WIND DIRECTION<br>degrees | WIND SPEED<br>m/sec | ERROR<br>m/sec ( $\pm$ ) | TEMPERATURE<br>degrees Kelvin | ERROR<br>degrees Kelvin ( $\pm$ ) | HEIGHT<br>meters |
|---------------------------|---------------------|--------------------------|-------------------------------|-----------------------------------|------------------|
| 64.09                     | 5.36                | 9.99                     | 263.76                        | 2.89                              | 40419.85         |
| 81.18                     | 54.68               | 12.28                    | 269.00                        | 3.97                              | 44749.40         |
| 80.41                     | 8.66                | 8.37                     | 282.42                        | 2.12                              | 48346.75         |
| 61.86                     | 26.96               | 5.29                     | 274.57                        | 1.28                              | 51861.90         |
| 50.31                     | 79.56               | 18.77                    | 268.67                        | 3.11                              | 55278.85         |
| 82.32                     | 59.90               | 26.00                    | 269.58                        | 3.93                              | 58616.44         |
| 128.98                    | 16.53               | 15.06                    | 266.14                        | 2.30                              | 61862.90         |
| 200.22                    | 26.66               | 7.24                     | 253.50                        | .91                               | 65516.50         |
| 67.39                     | 55.93               | 7.37                     | 209.72                        | .32                               | 71458.85         |
| 88.74                     | 3.80                | 11.70                    | 170.40                        | .34                               | 77206.64         |
| 55.71                     | 107.83              | 39.44                    | 153.69                        | .28                               | 80804.59         |
| 263.61                    | 38.86               | 41.48                    | 146.20                        | .46                               | 83795.09         |
| 248.52                    | 52.76               | 26.16                    | 141.87                        | .10                               | 86262.99         |
| 151.44                    | 122.09              | 12.97                    | 146.88                        | .09                               | 88650.10         |
| 168.42                    | 63.86               | 41.11                    | 188.63                        | .02                               | 90949.60         |



WIND COMPONENTS  
m/sec

| HEIGHT<br>meters | SOUTH<br>component (+) | WEST<br>component (+) |
|------------------|------------------------|-----------------------|
| 45000.00         | -7.89                  | -50.86                |
| 50000.00         | -6.74                  | -15.70                |
| 55000.00         | -47.70                 | -58.16                |
| 60000.00         | -.15                   | -39.53                |
| 65000.00         | 22.95                  | 6.09                  |
| 70000.00         | -10.08                 | -36.69                |
| 75000.00         | -8.30                  | -22.16                |
| 80000.00         | -47.18                 | -70.01                |
| 85000.00         | 11.64                  | 43.73                 |
| 90000.00         | 81.00                  | -31.62                |

### LEGEND

 5 m/sec or less  
  50 m/sec  
 10 m/sec  
 DIRECTION OF  
NORTH WIND ↓

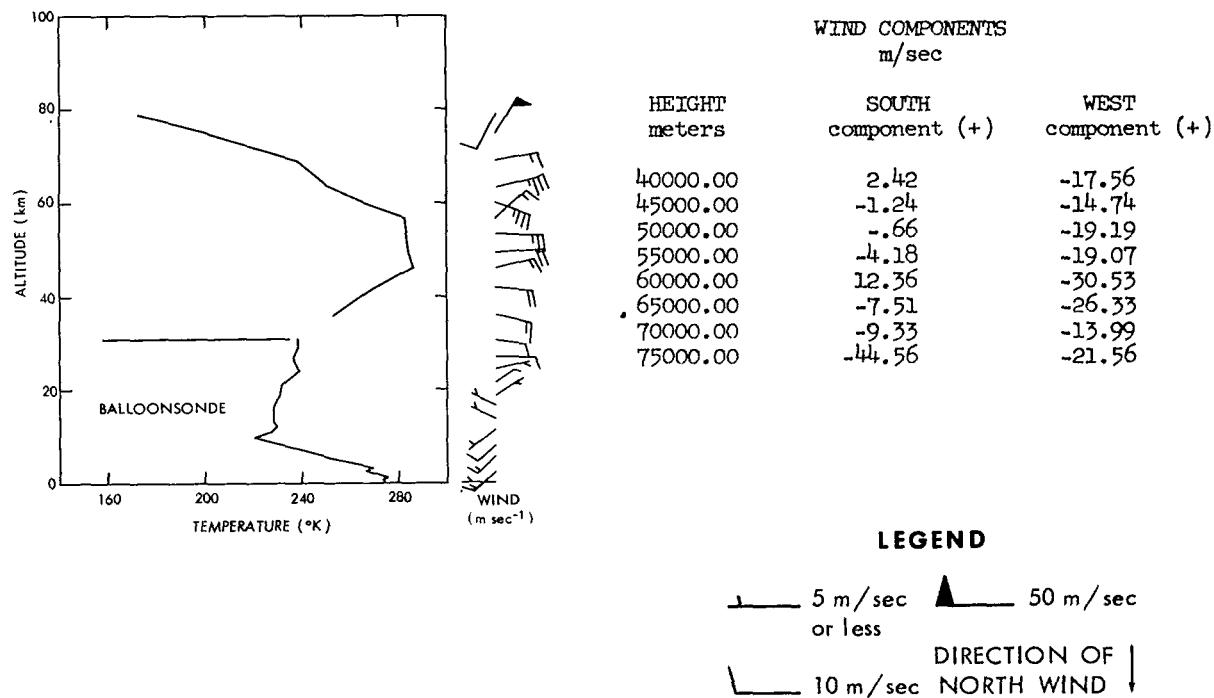
| HEIGHT<br>meters | PRESSURE<br>nt/sq meter | DENSITY<br>kg/cu meter | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>(%) | DENSITY<br>deviation<br>(%) |
|------------------|-------------------------|------------------------|-------------------------------|------------------------------|-----------------------------|
| 36000.00         | .5648619                | .03                    | .7840635                      | 02-                          | 250.73                      |
| 37000.00         | .4930793                | .03                    | .6781003                      | 02-                          | 253.67                      |
| 38000.00         | .4326790                | .03                    | .5873206                      | 02-                          | 256.62                      |
| 39000.00         | .3795750                | .03                    | .5014481                      | 02-                          | 259.57                      |
| 40000.00         | .3334046                | .03                    | .4425766                      | 02-                          | 262.51                      |
| 41000.00         | .2933724                | .03                    | .3861748                      | 02-                          | 264.45                      |
| 42000.00         | .2582844                | .03                    | .3387002                      | 02-                          | 265.67                      |
| 43000.00         | .2275337                | .03                    | .2970211                      | 02-                          | 266.68                      |
| 44000.00         | .2005672                | .03                    | .2606362                      | 02-                          | 268.09                      |
| 45000.00         | .1763301                | .03                    | .2283502                      | 02-                          | 269.33                      |
| 46000.00         | .1562852                | .03                    | .1983556                      | 02-                          | 273.66                      |
| 47000.00         | .1382866                | .03                    | .1735751                      | 02-                          | 277.30                      |
| 48000.00         | .1225657                | .03                    | .1518882                      | 02-                          | 281.12                      |
| 49000.00         | .1087189                | .03                    | .1348082                      | 02-                          | 286.06                      |
| 50000.00         | .9639076                | .02                    | .1204790                      | 02-                          | 278.79                      |
| 51000.00         | .8578154                | .02                    | .1075812                      | 02-                          | 276.17                      |
| 52000.00         | .7555850                | .02                    | .9056581                      | 03-                          | 271.32                      |
| 53000.00         | .6681047                | .02                    | .8538323                      | 03-                          | 272.60                      |
| 54000.00         | .5937140                | .02                    | .7502220                      | 03-                          | 270.87                      |
| 55000.00         | .5211888                | .02                    | .6746149                      | 03-                          | 269.15                      |
| 56000.00         | .4599607                | .02                    | .5950238                      | 03-                          | 268.06                      |
| 57000.00         | .4050415                | .02                    | .5254660                      | 03-                          | 263.17                      |
| 58000.00         | .3583266                | .02                    | .4633629                      | 03-                          | 260.41                      |
| 59000.00         | .3163095                | .02                    | .4093916                      | 03-                          | 269.17                      |
| 60000.00         | .2791467                | .02                    | .3627200                      | 03-                          | 268.11                      |
| 61000.00         | .2462373                | .02                    | .3212276                      | 03-                          | 267.05                      |
| 62000.00         | .2170926                | .02                    | .2816856                      | 03-                          | 265.66                      |
| 63000.00         | .1911820                | .02                    | .2540168                      | 03-                          | 262.20                      |
| 64000.00         | .1680870                | .02                    | .2263170                      | 03-                          | 258.74                      |
| 65000.00         | .1475320                | .02                    | .2013344                      | 03-                          | 255.28                      |
| 66000.00         | .1292214                | .02                    | .1800927                      | 03-                          | 242.23                      |
| 67000.00         | .1127656                | .02                    | .1619572                      | 03-                          | 242.56                      |
| 68000.00         | .9801361                | .01                    | .1451762                      | 03-                          | 235.20                      |
| 69000.00         | .8481423                | .01                    | .1296911                      | 03-                          | 227.83                      |
| 70000.00         | .7304837                | .01                    | .1154326                      | 03-                          | 220.46                      |
| 71000.00         | .6259914                | .01                    | .1023406                      | 03-                          | 213.00                      |
| 72000.00         | .5336252                | .01                    | .9023321                      | 04-                          | 206.01                      |
| 73000.00         | .4521224                | .01                    | .7913502                      | 04-                          | 199.17                      |
| 74000.00         | .3813879                | .01                    | .6008310                      | 04-                          | 192.33                      |
| 75000.00         | .3125447                | .01                    | .5001529                      | 04-                          | 185.40                      |
| 76000.00         | .2650690                | .01                    | .5186570                      | 04-                          | 178.45                      |
| 77000.00         | .2128083                | .01                    | .4457068                      | 04-                          | 171.81                      |
| 78000.00         | .1804547                | .01                    | .3770166                      | 04-                          | 166.71                      |
| 79000.00         | .1472915                | .01                    | .3156160                      | 04-                          | 162.07                      |
| 80000.00         | .1175263                | .01                    | .2645061                      | 04-                          | 157.42                      |
| 81000.00         | .9614234                | .00                    | .2192656                      | 04-                          | 153.27                      |
| 82000.00         | .7712289                | .00                    | .17802866                     | 04-                          | 150.60                      |
| 83000.00         | .6141331                | .00                    | .1456233                      | 04-                          | 148.19                      |
| 84000.00         | .4937620                | .00                    | .1179555                      | 04-                          | 145.82                      |
| 85000.00         | .3923922                | .00                    | .9487676                      | 05-                          | 144.08                      |
| 86000.00         | .3109666                | .00                    | .7611561                      | 05-                          | 142.37                      |
| 87000.00         | .2463222                | .00                    | .5083569                      | 05-                          | 143.41                      |
| 88000.00         | .1956318                | .00                    | .3683613                      | 05-                          | 145.51                      |
| 89000.00         | .1565575                | .00                    | .3550364                      | 05-                          | 153.27                      |
| 90000.00         | .1275191                | .00                    | .2592076                      | 05-                          | 171.32                      |

# FIGURE 23

## BARROW, 23 JUNE 1966, 0752 GMT.

| WIND DIRECTION<br>degrees | WIND SPEED<br>m/sec | ERROR<br>m/sec ( $\pm$ ) | TEMPERATURE<br>degrees Kelvin | ERROR<br>degrees Kelvin ( $\pm$ ) | HEIGHT<br>meters |
|---------------------------|---------------------|--------------------------|-------------------------------|-----------------------------------|------------------|
| 103.63                    | 14.88               |                          | 253.44                        |                                   | 36045.65         |
| 95.77                     | 19.12               |                          | 268.73                        |                                   | 41849.25         |
| 79.43                     | 13.35               | 5.40                     | 285.76                        | 1.22                              | 46197.15         |
| 87.70                     | 18.89               | 6.75                     | 284.29                        | 1.58                              | 49839.00         |
| 92.88                     | 25.94               | 7.00                     | 283.53                        | 1.48                              | 53377.85         |
| 48.16                     | 15.42               | 4.89                     | 282.89                        | 1.11                              | 56806.90         |
| 113.15                    | 34.20               | 8.78                     | 265.02                        | 1.37                              | 60152.25         |
| 73.60                     | 33.05               | 12.19                    | 251.27                        | 2.28                              | 63405.40         |
| 77.22                     | 12.93               |                          | 237.53                        |                                   | 69081.44         |
| 25.69                     | 49.98               |                          | 199.12                        |                                   | 75067.89         |
| 203.58                    | 8.42                | 19.52                    | 171.79                        | 3.21                              | 78867.74         |

Insufficient data for Error Analysis for layers 1,2,9 and 10

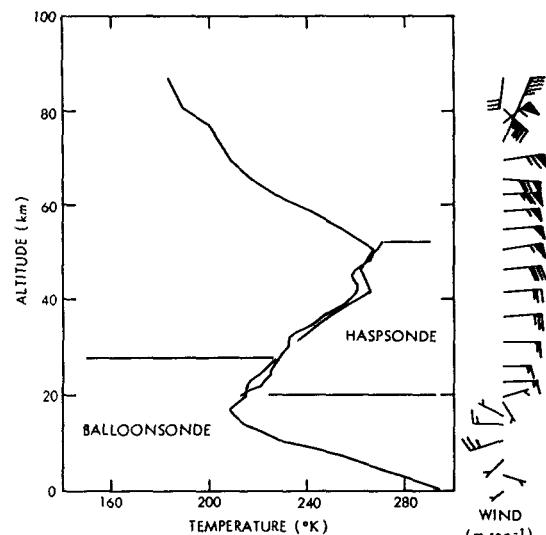


| HEIGHT<br>meters | PRESSURE<br>nt /sq meter | DENSITY<br>kg/cu meter | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>(%) | DENSITY<br>deviation<br>(%) |       |       |
|------------------|--------------------------|------------------------|-------------------------------|------------------------------|-----------------------------|-------|-------|
| 30000.00         | .1372179                 | 04                     | .2002619                      | 01-                          | 238.71                      | 14.63 | 8.77  |
| 31000.00         | .1191322                 | 04                     | .1721101                      | 01-                          | 241.14                      | 15.52 | 8.98  |
| 32000.00         | .1035812                 | 04                     | .1481476                      | 01-                          | 243.58                      | 16.50 | 9.22  |
| 33000.00         | .9012069                 | 03                     | .1277171                      | 01-                          | 246.02                      | 17.54 | 10.35 |
| 34000.00         | .7864132                 | 03                     | .1102704                      | 01-                          | 248.45                      | 18.54 | 11.52 |
| 35000.00         | .6866557                 | 03                     | .9534743                      | 02-                          | 250.89                      | 19.50 | 12.65 |
| 36000.00         | .6003643                 | 02                     | .8256338                      | 02-                          | 253.32                      | 20.42 | 13.75 |
| 37000.00         | .5256396                 | 03                     | .7154569                      | 02-                          | 255.95                      | 21.32 | 14.74 |
| 38000.00         | .4628605                 | 03                     | .6208249                      | 02-                          | 258.58                      | 22.19 | 15.69 |
| 39000.00         | .4046199                 | 03                     | .5396276                      | 02-                          | 261.22                      | 23.05 | 16.63 |
| 40000.00         | .3557211                 | 03                     | .4696767                      | 02-                          | 263.85                      | 23.88 | 17.54 |
| 41000.00         | .3131147                 | 03                     | .4093739                      | 02-                          | 266.49                      | 24.69 | 18.43 |
| 42000.00         | .2760335                 | 03                     | .3570700                      | 02-                          | 269.31                      | 25.48 | 19.23 |
| 43000.00         | .2437114                 | 03                     | .3107402                      | 02-                          | 273.23                      | 26.30 | 19.56 |
| 44000.00         | .2155640                 | 03                     | .2709674                      | 02-                          | 277.15                      | 27.17 | 19.95 |
| 45000.00         | .1810033                 | 03                     | .2367487                      | 02-                          | 281.06                      | 28.10 | 20.40 |
| 46000.00         | .1695308                 | 03                     | .2072458                      | 02-                          | 284.98                      | 29.07 | 20.90 |
| 47000.00         | .1506155                 | 03                     | .1838328                      | 02-                          | 285.43                      | 30.00 | 22.84 |
| 48000.00         | .1338166                 | 03                     | .1635597                      | 02-                          | 285.03                      | 30.81 | 24.21 |
| 49000.00         | .1188758                 | 03                     | .1455035                      | 02-                          | 284.62                      | 31.59 | 25.33 |
| 50000.00         | .1055901                 | 03                     | .1294111                      | 02-                          | 284.25                      | 32.35 | 26.02 |
| 51000.00         | .9378374                 | 02                     | .1150246                      | 02-                          | 284.04                      | 33.10 | 26.83 |
| 52000.00         | .8326824                 | 02                     | .1022327                      | 02-                          | 283.82                      | 33.84 | 27.63 |
| 53000.00         | .7396549                 | 02                     | .9085826                      | 03-                          | 283.61                      | 34.59 | 27.91 |
| 54000.00         | .6568296                 | 02                     | .8074031                      | 03-                          | 283.41                      | 35.45 | 27.88 |
| 55000.00         | .5832543                 | 02                     | .7174341                      | 03-                          | 283.22                      | 36.42 | 27.94 |
| 56000.00         | .5178980                 | 02                     | .6374630                      | 03-                          | 283.04                      | 37.53 | 28.10 |
| 57000.00         | .4597521                 | 02                     | .5622360                      | 03-                          | 281.85                      | 38.73 | 28.73 |
| 58000.00         | .4075813                 | 02                     | .5135140                      | 03-                          | 276.51                      | 39.88 | 31.38 |
| 59000.00         | .3604652                 | 02                     | .4631381                      | 03-                          | 271.17                      | 40.85 | 33.87 |
| 60000.00         | .3180847                 | 02                     | .4168631                      | 03-                          | 265.83                      | 41.61 | 36.26 |
| 61000.00         | .2800261                 | 02                     | .3731575                      | 03-                          | 261.43                      | 42.20 | 38.06 |
| 62000.00         | .2460092                 | 02                     | .3332149                      | 03-                          | 257.20                      | 42.64 | 32.24 |
| 63000.00         | .2156711                 | 02                     | .2970024                      | 03-                          | 252.98                      | 43.06 | 32.75 |
| 64000.00         | .1887170                 | 02                     | .2631629                      | 03-                          | 249.83                      | 43.50 | 39.70 |
| 65000.00         | .1648918                 | 02                     | .2321880                      | 03-                          | 247.41                      | 44.05 | 39.32 |
| 66000.00         | .1436895                 | 02                     | .2046155                      | 03-                          | 244.98                      | 44.74 | 39.07 |
| 67000.00         | .1253070                 | 02                     | .1800989                      | 03-                          | 242.57                      | 45.59 | 38.92 |
| 68000.00         | .1091368                 | 02                     | .1583238                      | 03-                          | 240.11                      | 46.52 | 38.89 |
| 69000.00         | .9485500                 | 01                     | .1390061                      | 03-                          | 237.73                      | 47.77 | 39.00 |
| 70000.00         | .8223582                 | 01                     | .1236821                      | 03-                          | 231.67                      | 48.96 | 41.29 |
| 71000.00         | .7102049                 | 01                     | .1098575                      | 03-                          | 225.22                      | 49.99 | 43.71 |
| 72000.00         | .6107817                 | 01                     | .9724886                      | 04-                          | 218.80                      | 50.80 | 46.02 |
| 73000.00         | .5229495                 | 01                     | .8577736                      | 04-                          | 212.39                      | 51.38 | 48.23 |
| 74000.00         | .4456422                 | 01                     | .7537614                      | 04-                          | 205.97                      | 51.70 | 50.21 |
| 75000.00         | .3778647                 | 01                     | .6596721                      | 04-                          | 199.55                      | 51.72 | 52.17 |
| 76000.00         | .3185879                 | 01                     | .5768262                      | 04-                          | 192.41                      | 51.38 | 54.30 |
| 77000.00         | .2668902                 | 01                     | .5019886                      | 04-                          | 185.22                      | 50.57 | 56.58 |
| 78000.00         | .2220315                 | 01                     | .4344873                      | 04-                          | 178.03                      | 49.24 | 57.09 |

# FIGURE 24

## WALLOPS ISLAND, 7 AUG. 1966, 0700 GMT.

| WIND DIRECTION<br>degrees | WIND SPEED<br>m/sec | ERROR<br>m/sec ( $\pm$ ) | TEMPERATURE<br>degrees Kelvin | ERROR<br>degrees Kelvin ( $\pm$ ) | HEIGHT<br>meters |
|---------------------------|---------------------|--------------------------|-------------------------------|-----------------------------------|------------------|
| 93.71                     | 16.20               | .99                      | 236.14                        | .57                               | 31061.75         |
| 87.41                     | 26.49               | .81                      | 248.83                        | .95                               | 36318.95         |
| 86.12                     | 25.42               | .69                      | 265.64                        | .48                               | 41861.75         |
| 83.61                     | 39.26               | .80                      | 262.33                        | .56                               | 46356.90         |
| 77.07                     | 53.71               | .56                      | 266.79                        | .39                               | 50513.54         |
| 85.84                     | 47.91               | .45                      | 254.01                        | .41                               | 55006.60         |
| 83.30                     | 56.75               | 1.37                     | 241.19                        | .58                               | 58744.85         |
| 87.10                     | 75.92               | 1.01                     | 226.99                        | .48                               | 62293.60         |
| 96.03                     | 82.19               | 1.48                     | 216.03                        | .60                               | 65713.35         |
| 79.64                     | 66.06               | 1.25                     | 209.21                        | .98                               | 69434.49         |
| 21.94                     | 47.41               | 2.74                     | 204.01                        | .65                               | 73466.19         |
| 51.81                     | 56.08               | 1.90                     | 199.47                        | .53                               | 77260.69         |
| 132.75                    | 47.26               | 3.19                     | 188.84                        | 1.74                              | 80488.35         |
| 182.77                    | 28.91               | 26.30                    | 182.67                        | 5.75                              | 86900.75         |



WIND COMPONENTS  
m/sec

| HEIGHT<br>meters | SOUTH<br>component (+) | WEST<br>component (+) |
|------------------|------------------------|-----------------------|
| 35000.00         | -.63                   | -23.88                |
| 40000.00         | -1.54                  | -25.73                |
| 45000.00         | -3.57                  | -34.89                |
| 50000.00         | -11.07                 | -50.69                |
| 55000.00         | -3.49                  | -47.79                |
| 60000.00         | -5.64                  | -63.24                |
| 65000.00         | 6.03                   | -80.49                |
| 70000.00         | -16.38                 | -58.35                |
| 75000.00         | -40.21                 | -28.37                |
| 80000.00         | 21.98                  | -36.12                |
| 85000.00         | 29.82                  | -9.30                 |

### LEGEND

— 5 m/sec or less      ▲ 50 m/sec

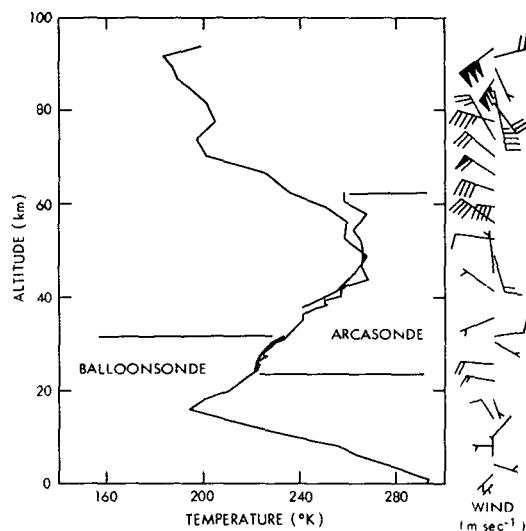
— 10 m/sec NORTH WIND ↓

| HEIGHT<br>meters | PRESSURE<br>nt/sq meter |    | DENSITY<br>kg/cu meter | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>(%) | DENSITY<br>deviation<br>(%) |
|------------------|-------------------------|----|------------------------|-------------------------------|------------------------------|-----------------------------|
| 27000.00         | .1973611                | 04 | .3048299               | 01-                           | 225.56                       | 4.98                        |
| 28000.40         | .1700053                | 04 | .2595794               | 01-                           | 228.16                       | 5.18                        |
| 29000.00         | .1466963                | 04 | .2214600               | 01-                           | 230.77                       | 5.50                        |
| 30000.00         | .1267988                | 04 | .1892844               | 01-                           | 233.37                       | 5.92                        |
| 31000.00         | .1097826                | 04 | .1620730               | 01-                           | 235.98                       | 6.45                        |
| 32000.00         | .9519951                | 03 | .1391145               | 01-                           | 238.40                       | 7.07                        |
| 33000.00         | .8267610                | 03 | .1196036               | 01-                           | 240.82                       | 7.74                        |
| 34000.00         | .7190429                | 03 | .1029886               | 01-                           | 243.23                       | 8.38                        |
| 35000.00         | .6262487                | 03 | .8881665               | 02-                           | 245.64                       | 8.99                        |
| 36000.00         | .5461902                | 03 | .7670901               | 02-                           | 248.05                       | 9.56                        |
| 37000.00         | .4770721                | 03 | .6624454               | 02-                           | 250.89                       | 10.11                       |
| 38000.00         | .4173744                | 03 | .5726269               | 02-                           | 253.92                       | 10.66                       |
| 39000.00         | .3657414                | 03 | .4958642               | 02-                           | 256.96                       | 11.22                       |
| 40000.00         | .3210064                | 03 | .4301353               | 02-                           | 259.99                       | 11.79                       |
| 41000.00         | .2821811                | 03 | .3737501               | 02-                           | 263.03                       | 12.36                       |
| 42000.00         | .2483974                | 03 | .7258909               | 02-                           | 265.54                       | 12.92                       |
| 43000.00         | .2187603                | 03 | .2878078               | 02-                           | 264.80                       | 13.77                       |
| 44000.00         | .1925986                | 03 | .2540969               | 02-                           | 264.06                       | 13.63                       |
| 45000.00         | .1695119                | 03 | .2242653               | 02-                           | 263.32                       | 13.68                       |
| 46000.00         | .1491450                | 03 | .1978744               | 02-                           | 262.59                       | 13.55                       |
| 47000.00         | .1312208                | 03 | .1738109               | 02-                           | 263.01                       | 13.66                       |
| 48000.00         | .1154974                | 03 | .1523618               | 02-                           | 264.49                       | 12.90                       |
| 49000.00         | .1017148                | 03 | .1336364               | 02-                           | 265.16                       | 12.59                       |
| 50000.00         | .8962647                | 02 | .1172791               | 02-                           | 266.23                       | 12.34                       |
| 51000.00         | .7898231                | 02 | .1036748               | 02-                           | 265.40                       | 12.09                       |
| 52000.00         | .6954375                | 02 | .9227417               | 03-                           | 262.56                       | 11.75                       |
| 53000.00         | .6115075                | 02 | .8202638               | 03-                           | 259.72                       | 11.27                       |
| 54000.00         | .5369677                | 02 | .7282520               | 03-                           | 256.87                       | 10.73                       |
| 55000.00         | .4708513                | 02 | .6457319               | 03-                           | 254.03                       | 10.13                       |
| 56000.00         | .4122190                | 02 | .5730525               | 03-                           | 250.60                       | 9.46                        |
| 57000.00         | .3602424                | 02 | .5077469               | 03-                           | 247.17                       | 8.70                        |
| 58000.00         | .3142403                | 02 | .4491425               | 03-                           | 243.74                       | 7.84                        |
| 59000.00         | .2735827                | 02 | .3968535               | 03-                           | 240.16                       | 6.89                        |
| 60000.00         | .2376712                | 02 | .3506036               | 03-                           | 236.16                       | 5.81                        |
| 61000.00         | .2059867                | 02 | .3091021               | 03-                           | 232.16                       | 4.60                        |
| 62000.00         | .1780906                | 02 | .2719291               | 03-                           | 228.16                       | 3.26                        |
| 63000.00         | .1536118                | 02 | .2381416               | 03-                           | 224.72                       | 1.89                        |
| 64000.00         | .1322125                | 02 | .2079321               | 03-                           | 221.51                       | .53                         |
| 65000.00         | .1135511                | 02 | .1812048               | 03-                           | 218.31                       | .79-                        |
| 66000.00         | .9732288                | 01 | .1573341               | 03-                           | 215.50                       | 2.09-                       |
| 67000.00         | .8327889                | 01 | .1317855               | 03-                           | 213.66                       | 3.31-                       |
| 68000.00         | .7116936                | 01 | .1170453               | 03-                           | 211.83                       | 4.40-                       |
| 69000.00         | .6074461                | 01 | .1007662               | 03-                           | 210.00                       | 5.37-                       |
| 70000.00         | .5177672                | 01 | .8652407               | 04-                           | 208.47                       | 6.21-                       |
| 71000.00         | .4409021                | 01 | .7413763               | 04-                           | 207.58                       | 6.88-                       |
| 72000.00         | .3750903                | 01 | .6346632               | 04-                           | 205.89                       | 7.38-                       |
| 73000.00         | .3187941                | 01 | .5428074               | 04-                           | 204.60                       | 7.71-                       |
| 74000.00         | .2706880                | 01 | .4637060               | 04-                           | 203.36                       | 7.85-                       |
| 75000.00         | .2296273                | 01 | .3956923               | 04-                           | 202.17                       | 7.79-                       |
| 76000.00         | .1946151                | 01 | .3373543               | 04-                           | 200.97                       | 7.52-                       |
| 77000.00         | .1647872                | 01 | .2873585               | 04-                           | 199.78                       | 7.03-                       |
| 78000.00         | .1393075                | 01 | .2463127               | 04-                           | 197.03                       | 6.36-                       |
| 79000.00         | .1174622                | 01 | .2112288               | 04-                           | 197.74                       | 5.58-                       |
| 80000.00         | .9876883                | 00 | .1806752               | 04-                           | 190.44                       | 4.71-                       |
| 81000.00         | .8284604                | 00 | .1542382               | 04-                           | 188.34                       | 3.89-                       |
| 82000.00         | .6939454                | 00 | .1290163               | 04-                           | 187.38                       | 3.20-                       |
| 83000.00         | .5807737                | 00 | .1085370               | 04-                           | 186.42                       | 2.59-                       |
| 84000.00         | .4856383                | 00 | .9122517               | 05-                           | 185.46                       | 2.07-                       |
| 85000.00         | .4057315                | 00 | .7661243               | 05-                           | 184.50                       | 1.64-                       |
| 86000.00         | .3386730                | 00 | .6428527               | 05-                           | 183.53                       | 1.30-                       |

# FIGURE 25

## NATAL, 7 AUGUST 1966, 0705 GMT.

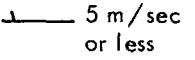
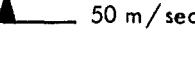
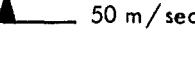
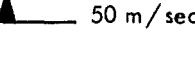
| WIND DIRECTION<br>degrees | WIND SPEED<br>m/sec | ERROR<br>m/sec ( $\pm$ ) | TEMPERATURE<br>degrees Kelvin | ERROR<br>degrees Kelvin ( $\pm$ ) | HEIGHT<br>meters |
|---------------------------|---------------------|--------------------------|-------------------------------|-----------------------------------|------------------|
| 244.93                    | 2.33                | 2.55                     | 240.62                        | .67                               | 35659.15         |
| 306.14                    | 2.14                | 4.12                     | 254.71                        | 1.26                              | 41341.75         |
| 357.92                    | 4.48                | 7.47                     | 263.39                        | 2.31                              | 45611.00         |
| 165.34                    | 15.29               | 13.17                    | 266.63                        | 2.42                              | 49163.00         |
| 275.85                    | 8.25                | 6.79                     | 258.50                        | 2.23                              | 52621.00         |
| 302.58                    | 42.44               | 12.36                    | 258.93                        | 2.40                              | 55994.90         |
| 279.10                    | 37.65               | 13.76                    | 250.30                        | 2.55                              | 59276.00         |
| 285.24                    | 40.63               | 14.59                    | 234.81                        | 2.67                              | 62467.65         |
| 302.69                    | 57.92               | 10.64                    | 225.64                        | 2.05                              | 66076.00         |
| 307.49                    | 29.19               | 9.97                     | 201.12                        | 1.98                              | 70067.60         |
| 339.28                    | 23.73               | 9.35                     | 196.52                        | 2.94                              | 73903.05         |
| 296.21                    | 45.61               | 18.39                    | 204.01                        | 3.69                              | 77610.60         |
| 146.72                    | 29.00               | 20.71                    | 200.88                        | 3.99                              | 81153.45         |
| 173.42                    | 47.19               | 31.78                    | 193.92                        | 6.22                              | 84120.30         |
| 209.57                    | 74.24               | 20.44                    | 189.27                        | 4.77                              | 86556.10         |
| 161.97                    | 1.57                | 30.72                    | 186.82                        | 4.60                              | 88912.30         |
| 72.74                     | 61.14               | 32.77                    | 183.35                        | 6.62                              | 91189.09         |
| 245.40                    | 148.39              | 49.52                    | 198.49                        | 9.63                              | 93313.74         |



### WIND COMPONENTS m/sec

| HEIGHT<br>meters | SOUTH<br>component (+) | WEST<br>component (+) |
|------------------|------------------------|-----------------------|
| 40000.00         | -0.73                  | 1.81                  |
| 45000.00         | -4.01                  | .38                   |
| 50000.00         | 11.00                  | -.94                  |
| 55000.00         | -16.36                 | 27.63                 |
| 60000.00         | -7.02                  | 37.63                 |
| 65000.00         | -25.14                 | 45.90                 |
| 70000.00         | -17.99                 | 23.59                 |
| 75000.00         | -21.58                 | 18.01                 |
| 80000.00         | 9.70                   | 2.69                  |
| 85000.00         | 53.26                  | 9.77                  |
| 90000.00         | -8.01                  | -28.87                |

### LEGEND

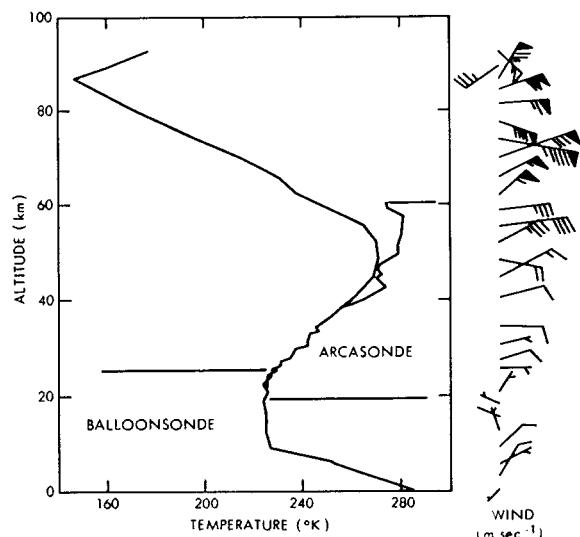
 5 m/sec or less  
 10 m/sec  
 50 m/sec  
 DIRECTION OF  
NORTH WIND

| HEIGHT<br>meters | PRESSURE<br>nt/sq meter |     | DENSITY<br>kg./cu meter |     | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>(%) | DENSITY<br>deviation<br>(%) |
|------------------|-------------------------|-----|-------------------------|-----|-------------------------------|------------------------------|-----------------------------|
| 30000.00         | .1185574                | 04  | .1814649                | 01- | 227.61                        | .95-                         | 1.43-                       |
| 31000.00         | .1023627                | 04  | .1537270                | 01- | 231.98                        | .74-                         | 2.65-                       |
| 32000.00         | .8857978                | 03  | .1315287                | 01- | 234.62                        | .36-                         | 2.96-                       |
| 33000.00         | .7675709                | 03  | .1131831                | 01- | 236.26                        | .03                          | 2.20-                       |
| 34000.00         | .6658121                | 03  | .9750177                | 02- | 237.90                        | .36                          | 1.38-                       |
| 35000.00         | .5781332                | 03  | .8408281                | 02- | 239.54                        | .61                          | .65-                        |
| 36000.00         | .5025480                | 03  | .7250709                | 02- | 241.46                        | .80                          | .09-                        |
| 37000.00         | .4374192                | 03  | .6246908                | 02- | 243.94                        | .96                          | .18                         |
| 38000.00         | .3812819                | 03  | .5390420                | 02- | 246.42                        | 1.09                         | .44                         |
| 39000.00         | .3328204                | 03  | .4658430                | 02- | 248.90                        | 1.21                         | .68                         |
| 40000.00         | .2909223                | 03  | .4031876                | 02- | 251.38                        | 1.31                         | .20                         |
| 41000.00         | .2546452                | 03  | .3494619                | 02- | 253.85                        | 1.39                         | 1.10                        |
| 42000.00         | .2231726                | 03  | .3026565                | 02- | 256.04                        | 1.45                         | 1.39                        |
| 43000.00         | .1958098                | 03  | .2643269                | 02- | 258.07                        | 1.48                         | 1.70                        |
| 44000.00         | .1719852                | 03  | .2303511                | 02- | 260.11                        | 1.46                         | 1.97                        |
| 45000.00         | .1512181                | 03  | .2009657                | 02- | 262.14                        | 1.42                         | 2.20                        |
| 46000.00         | .1330821                | 03  | .1757925                | 02- | 263.74                        | 1.32                         | 2.55                        |
| 47000.00         | .1171970                | 03  | .1542759                | 02- | 264.65                        | 1.16                         | 3.09                        |
| 48000.00         | .1032573                | 03  | .1354591                | 02- | 265.56                        | .94                          | 2.87                        |
| 49000.00         | .9101856                | 02  | .1189950                | 02- | 266.47                        | .75                          | 2.33                        |
| 50000.00         | .8021622                | 02  | .1055930                | 02- | 264.65                        | .54                          | 2.82                        |
| 51000.00         | .7062810                | 02  | .9380471                | 03- | 262.30                        | .24                          | 3.43                        |
| 52000.00         | .6211728                | 02  | .8324703                | 03- | 259.95                        | .17-                         | 3.93                        |
| 53000.00         | .5458337                | 02  | .7354962                | 03- | 258.54                        | .67-                         | 3.54                        |
| 54000.00         | .4795003                | 02  | .6457939                | 03- | 258.67                        | 1.11-                        | 2.28                        |
| 55000.00         | .4212716                | 02  | .5670903                | 03- | 258.80                        | 1.46-                        | 1.13                        |
| 56000.00         | .3701532                | 02  | .4980584                | 03- | 258.91                        | 1.70-                        | .08                         |
| 57000.00         | .3250422                | 02  | .4418474                | 03- | 256.28                        | 1.91-                        | .14                         |
| 58000.00         | .2850584                | 02  | .3915124                | 03- | 253.65                        | 2.16-                        | .16                         |
| 59000.00         | .2496614                | 02  | .3464888                | 03- | 251.02                        | 2.45-                        | .15                         |
| 60000.00         | .2182688                | 02  | .3081263                | 03- | 246.78                        | 2.82-                        | .72                         |
| 61000.00         | .1903549                | 02  | .2741129                | 03- | 241.93                        | 3.33-                        | 1.41                        |
| 62000.00         | .1655580                | 02  | .2432872                | 03- | 237.07                        | 4.00-                        | 1.66                        |
| 63000.00         | .1436364                | 02  | .2143483                | 03- | 233.45                        | 4.72-                        | .86                         |
| 64000.00         | .1243886                | 02  | .1876661                | 03- | 230.91                        | 5.41-                        | .37-                        |
| 65000.00         | .1075536                | 02  | .1640713                | 03- | 228.37                        | 6.03-                        | 1.54-                       |
| 66000.00         | .9285025                | 01  | .1432343                | 03- | 225.83                        | 6.59-                        | 2.64-                       |
| 67000.00         | .7993817                | 01  | .1266061                | 03- | 219.96                        | 7.19-                        | 2.34-                       |
| 68000.00         | .6854009                | 01  | .1116727                | 03- | 213.82                        | 7.93-                        | 2.03-                       |
| 69000.00         | .5850712                | 01  | .9814572                | 04- | 207.68                        | 8.85-                        | 1.85-                       |
| 70000.00         | .4970649                | 01  | .8592784                | 04- | 201.53                        | 9.95-                        | 1.83-                       |
| 71000.00         | .4210432                | 01  | .7334109                | 04- | 200.00                        | 11.07-                       | 4.05-                       |
| 72000.00         | .3562469                | 01  | .6242866                | 04- | 198.80                        | 12.04-                       | 6.25-                       |
| 73000.00         | .3011335                | 01  | .5309091                | 04- | 197.60                        | 12.82-                       | 8.25-                       |
| 74000.00         | .2543334                | 01  | .4504214                | 04- | 196.71                        | 13.42-                       | 10.18-                      |
| 75000.00         | .2149217                | 01  | .3767563                | 04- | 198.73                        | 13.69-                       | 1.39-                       |
| 76000.00         | .1819363                | 01  | .3157248                | 04- | 200.75                        | 13.54-                       | 15.49-                      |
| 77000.00         | .1542782                | 01  | .2650618                | 04- | 202.77                        | 12.96-                       | 17.42-                      |
| 78000.00         | .1309860                | 01  | .2240604                | 04- | 203.66                        | 11.95-                       | 18.52-                      |
| 79000.00         | .1112162                | 01  | .1910688                | 04- | 202.78                        | 10.61-                       | 18.65-                      |
| 80000.00         | .9436836                | 00  | .1628307                | 04- | 201.90                        | 8.96-                        | 18.54-                      |
| 81000.00         | .8001874                | 00  | .1386758                | 04- | 201.02                        | 7.17-                        | 16.56-                      |
| 82000.00         | .6777110                | 00  | .1186977                | 04- | 198.91                        | 5.46-                        | 14.11-                      |
| 83000.00         | .5729345                | 00  | .1015482                | 04- | 196.55                        | 3.90-                        | 11.69-                      |
| 84000.00         | .4834034                | 00  | .8671782                | 05- | 194.20                        | 2.52-                        | 9.32-                       |
| 85000.00         | .4071113                | 00  | .7377809                | 05- | 192.23                        | 1.30-                        | 7.25-                       |
| 86000.00         | .3422821                | 00  | .6265235                | 05- | 190.32                        | .24-                         | 5.31-                       |
| 87000.00         | .2873404                | 00  | .5301988                | 05- | 188.80                        | .66                          | 3.67-                       |
| 88000.00         | .2409442                | 00  | .4470428                | 05- | 187.77                        | 1.46                         | 2.37-                       |
| 89000.00         | .2018497                | 00  | .3766734                | 05- | 186.69                        | 2.17                         | 1.13-                       |
| 90000.00         | .1688978                | 00  | .3177819                | 05- | 185.16                        | 2.74                         | .24                         |
| 91000.00         | .1411246                | 00  | .2677354                | 05- | 183.63                        | 3.02                         | 3.05                        |
| 92000.00         | .1181492                | 00  | .2176376                | 05- | 189.12                        | 3.19                         | 1.84                        |
| 93000.00         | .9949618                | 01- | .1766195                | 05- | 196.25                        | 3.66                         | .18                         |

# FIGURE 26

## CHURCHILL, 7 AUGUST 1966, 0904 GMT.

| WIND DIRECTION<br>degrees | WIND SPEED<br>m/sec | ERROR<br>m/sec ( $\pm$ ) | TEMPERATURE<br>degrees Kelvin | ERROR<br>degrees Kelvin ( $\pm$ ) | HEIGHT<br>meters |
|---------------------------|---------------------|--------------------------|-------------------------------|-----------------------------------|------------------|
| 92.85                     | 12.17               | 1.96                     | 245.90                        | 1.07                              | 34688.05         |
| 80.50                     | 8.95                | 2.08                     | 260.64                        | .79                               | 40505.40         |
| 67.55                     | 16.37               | 3.74                     | 268.57                        | 1.27                              | 44853.10         |
| 101.22                    | 20.05               | 3.76                     | 270.73                        | 1.25                              | 48481.70         |
| 60.77                     | 32.84               | 3.80                     | 269.59                        | 1.11                              | 52037.65         |
| 81.03                     | 39.66               | 2.82                     | 265.19                        | .79                               | 55484.94         |
| 77.30                     | 34.58               | 2.10                     | 251.99                        | .42                               | 58835.80         |
| 49.17                     | 55.86               | 2.41                     | 237.56                        | .45                               | 62112.00         |
| 65.01                     | 56.04               | 1.69                     | 230.62                        | .26                               | 65804.65         |
| 76.17                     | 79.01               | 2.78                     | 214.84                        | .40                               | 69885.94         |
| 99.30                     | 96.75               | 9.58                     | 197.06                        | 1.38                              | 73815.49         |
| 104.97                    | 87.35               | 13.43                    | 181.20                        | 1.85                              | 77620.60         |
| 88.74                     | 66.90               | 11.33                    | 166.60                        | 1.51                              | 81269.54         |
| 74.22                     | 112.29              | 12.65                    | 156.41                        | 1.64                              | 84325.05         |
| 27.21                     | 74.52               | 12.39                    | 147.11                        | 1.51                              | 86842.05         |
| 236.34                    | 35.85               | 19.90                    | 160.81                        | 2.66                              | 89263.69         |
| 136.91                    | 55.64               | 11.93                    | 176.87                        | 1.80                              | 92652.00         |



### WIND COMPONENTS m/sec

| HEIGHT<br>meters | SOUTH<br>component (+) | WEST<br>component (+) |
|------------------|------------------------|-----------------------|
| 35000.00         | .49                    | -11.97                |
| 40000.00         | -1.29                  | -9.11                 |
| 45000.00         | -5.83                  | -15.31                |
| 50000.00         | -4.61                  | -23.50                |
| 55000.00         | -7.57                  | -37.69                |
| 60000.00         | -17.87                 | -36.76                |
| 65000.00         | -26.47                 | -48.93                |
| 70000.00         | -17.89                 | -77.26                |
| 75000.00         | 17.79                  | -92.02                |
| 80000.00         | 6.88                   | -72.97                |
| 85000.00         | -40.11                 | -88.21                |
| 90000.00         | 24.38                  | 15.09                 |

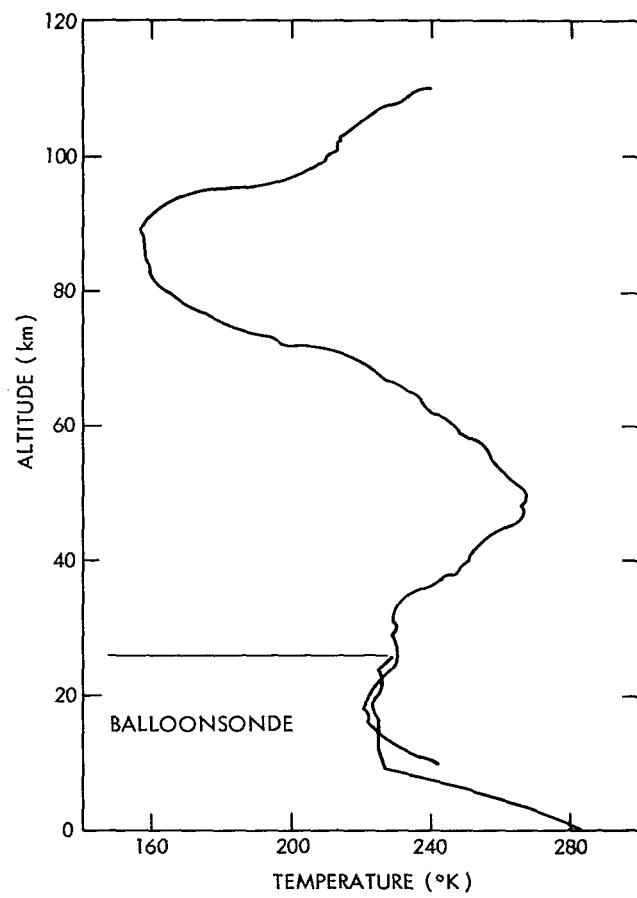
### LEGEND

— 5 m/sec or less      ▲ 50 m/sec

└ 10 m/sec      DIRECTION OF NORTH WIND ↓

| HEIGHT<br>meters | PRESSURE<br>nt./sq meter |     | DENSITY<br>kg./cu meter | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>(%) | DENSITY<br>deviation<br>(%) |
|------------------|--------------------------|-----|-------------------------|-------------------------------|------------------------------|-----------------------------|
| 30000.00         | .1312065                 | 04  | .1903670                | 210.28                        | 9.68                         | 3.40                        |
| 31000.00         | .1140692                 | 04  | .1645683                | 210.48                        | 10.61                        | 4.20                        |
| 32000.00         | .9917585                 | 03  | .1423742                | 212.67                        | 11.55                        | 5.03                        |
| 33000.00         | .8690921                 | 07  | .1230645                | 213.87                        | 12.45                        | 6.51                        |
| 34000.00         | .7513330                 | 03  | .1062034                | 215.07                        | 13.25                        | 8.02                        |
| 35000.00         | .6547350                 | 03  | .9246212                | 216.67                        | 13.94                        | 9.24                        |
| 36000.00         | .5712300                 | 03  | .7085101                | 219.22                        | 14.58                        | 10.01                       |
| 37000.00         | .4900005                 | 03  | .6006501                | 221.76                        | 15.20                        | 10.76                       |
| 38000.00         | .4366781                 | 03  | .5082528                | 224.29                        | 15.78                        | 11.47                       |
| 39000.00         | .3825857                 | 03  | .5182762                | 226.82                        | 16.35                        | 12.16                       |
| 40000.00         | .3356429                 | 03  | .4508518                | 229.35                        | 16.89                        | 12.83                       |
| 41000.00         | .2918211                 | 03  | .3927140                | 231.54                        | 17.30                        | 13.61                       |
| 42000.00         | .2592308                 | 03  | .3420159                | 233.36                        | 17.85                        | 14.50                       |
| 43000.00         | .2281486                 | 03  | .2997248                | 235.18                        | 18.24                        | 15.32                       |
| 44000.00         | .2009769                 | 03  | .2622257                | 237.01                        | 18.57                        | 16.08                       |
| 45000.00         | .1771936                 | 03  | .2297802                | 238.65                        | 18.84                        | 16.85                       |
| 46000.00         | .1563130                 | 03  | .2022533                | 239.25                        | 19.01                        | 17.29                       |
| 47000.00         | .1373366                 | 03  | .1780811                | 239.84                        | 19.06                        | 18.99                       |
| 48000.00         | .1217582                 | 03  | .1568481                | 240.44                        | 19.02                        | 19.12                       |
| 49000.00         | .1075020                 | 03  | .1384134                | 240.58                        | 19.00                        | 19.03                       |
| 50000.00         | .9401303                 | 02  | .1223377                | 240.28                        | 18.97                        | 19.13                       |
| 51000.00         | .8379043                 | 02  | .1081191                | 240.99                        | 18.22                        | 19.21                       |
| 52000.00         | .7396404                 | 02  | .9554377                | 243.69                        | 18.85                        | 19.28                       |
| 53000.00         | .6526706                 | 02  | .8471004                | 246.43                        | 18.77                        | 19.26                       |
| 54000.00         | .5756390                 | 02  | .7507497                | 247.12                        | 18.70                        | 18.90                       |
| 55000.00         | .5073911                 | 02  | .6649007                | 247.81                        | 18.68                        | 18.59                       |
| 56000.00         | .4468290                 | 02  | .5915417                | 243.15                        | 18.65                        | 18.87                       |
| 57000.00         | .3928723                 | 02  | .5280230                | 249.21                        | 18.55                        | 19.67                       |
| 58000.00         | .3417774                 | 02  | .4705265                | 255.27                        | 18.32                        | 20.38                       |
| 59000.00         | .3013573                 | 02  | .4186743                | 251.26                        | 17.27                        | 21.02                       |
| 60000.00         | .2638742                 | 02  | .3723253                | 246.86                        | 17.18                        | 21.73                       |
| 61000.00         | .2300452                 | 02  | .3305484                | 242.45                        | 16.82                        | 22.29                       |
| 62000.00         | .2000583                 | 02  | .2927765                | 238.05                        | 16.00                        | 22.34                       |
| 63000.00         | .1736522                 | 02  | .2564612                | 235.82                        | 15.18                        | 20.67                       |
| 64000.00         | .1505548                 | 02  | .2241350                | 234.01                        | 14.48                        | 18.98                       |
| 65000.00         | .1303852                 | 02  | .1956794                | 232.13                        | 13.91                        | 17.41                       |
| 66000.00         | .1127771                 | 02  | .1709232                | 229.86                        | 13.45                        | 16.17                       |
| 67000.00         | .9736286                 | 01  | .1500841                | 226.00                        | 13.03                        | 15.77                       |
| 68000.00         | .8384283                 | 01  | .1314264                | 222.13                        | 12.61                        | 15.35                       |
| 69000.00         | .7201576                 | 01  | .1149480                | 218.26                        | 12.19                        | 14.24                       |
| 70000.00         | .6160028                 | 01  | .1002794                | 214.32                        | 11.74                        | 14.55                       |
| 71000.00         | .5268489                 | 01  | .8748765                | 209.79                        | 11.26                        | 14.45                       |
| 72000.00         | .4464172                 | 01  | .7610463                | 205.27                        | 10.71                        | 14.28                       |
| 73000.00         | .3803123                 | 01  | .6600069                | 200.74                        | 10.09                        | 14.05                       |
| 74000.00         | .3213672                 | 01  | .5703806                | 196.28                        | 9.39                         | 13.73                       |
| 75000.00         | .2705602                 | 01  | .4906195                | 192.12                        | 8.64                         | 13.17                       |
| 76000.00         | .2262325                 | 01  | .4206434                | 187.25                        | 7.83                         | 12.59                       |
| 77000.00         | .1806132                 | 01  | .3594258                | 183.78                        | 6.37                         | 11.97                       |
| 78000.00         | .1577887                 | 01  | .3059313                | 179.68                        | 6.06                         | 11.24                       |
| 79000.00         | .1307642                 | 01  | .2593077                | 175.68                        | 5.09                         | 10.39                       |
| 80000.00         | .1079067                 | 01  | .2180670                | 171.68                        | 4.00                         | 9.53                        |
| 81000.00         | .8864754                 | 00  | .1814776                | 167.68                        | 2.83                         | 10.81                       |
| 82000.00         | .7250685                 | 00  | .1538690                | 164.16                        | 1.13                         | 11.33                       |
| 83000.00         | .5905801                 | 00  | .1270289                | 160.23                        | -.21                         | 11.24                       |
| 84000.00         | .4700036                 | 00  | .1059570                | 157.40                        | 3.41                         | 10.80                       |
| 85000.00         | .3867300                 | 00  | .8753477                | 153.01                        | 6.24                         | 10.03                       |
| 86000.00         | .3106593                 | 00  | .7204515                | 150.22                        | 9.16                         | 8.87                        |
| 87000.00         | .2484000                 | 00  | .5812032                | 148.00                        | 12.94                        | 6.26                        |
| 88000.00         | .1929784                 | 00  | .4517270                | 153.66                        | 16.08                        | 1.33-                       |
| 89000.00         | .1611038                 | 00  | .3522700                | 159.32                        | 18.15                        | 7.53-                       |
| 90000.00         | .1311640                 | 00  | .2781177                | 164.30                        | 22.00                        | 12.26-                      |
| 91000.00         | .1074388                 | 00  | .2214206                | 163.04                        | 21.56                        | 14.77-                      |
| 92000.00         | .8849670                 | 01- | .1774104                | 173.78                        | 22.70                        | 16.98-                      |

FIGURE 27  
CHURCHILL, 7 AUGUST 1966, 0949 GMT.

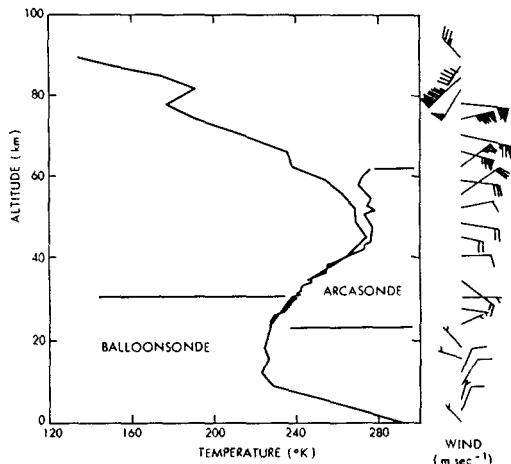


| HEIGHT<br>meters | PRESSURE<br>n./sq meter | DENSITY<br>kg./cu meter | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>% | DENSITY<br>deviation<br>% |
|------------------|-------------------------|-------------------------|-------------------------------|----------------------------|---------------------------|
| 14000.00         | .2500726                | .05                     | .7750000                      | .00                        | .242.30                   |
| 11000.00         | .2956480                | .05                     | .7310000                      | .00                        | .227.10                   |
| 12000.00         | .1757430                | .05                     | .7830000                      | .00                        | .232.40                   |
| 13000.00         | .1570362                | .05                     | .7579999                      | .00                        | .207.60                   |
| 14000.00         | .1453214                | .05                     | .7240000                      | .00                        | .205.50                   |
| 15000.00         | .1246244                | .05                     | .7140000                      | .00                        | .203.30                   |
| 16000.00         | .1175570                | .05                     | .7580000                      | .00                        | .221.20                   |
| 17000.00         | .9155611                | .04                     | .7440000                      | .00                        | .229.10                   |
| 18000.00         | .7970452                | .04                     | .7240000                      | .00                        | .221.20                   |
| 19000.00         | .6750444                | .04                     | .7060000                      | .00                        | .220.20                   |
| 20000.00         | .5794523                | .04                     | .6940000                      | .01                        | .221.30                   |
| 21000.00         | .4986257                | .04                     | .7740000                      | .01                        | .224.00                   |
| 22000.00         | .4270049                | .04                     | .6679999                      | .01                        | .224.70                   |
| 23000.00         | .3693209                | .04                     | .5650000                      | .01                        | .227.30                   |
| 24000.00         | .3173672                | .04                     | .4820000                      | .01                        | .229.60                   |
| 25000.00         | .2716441                | .04                     | .4150000                      | .01                        | .230.10                   |
| 26000.00         | .2377138                | .04                     | .3580000                      | .01                        | .230.20                   |
| 27000.00         | .2030672                | .04                     | .3090000                      | .01                        | .230.20                   |
| 28000.00         | .1759855                | .04                     | .2630000                      | .01                        | .229.10                   |
| 29000.00         | .1519525                | .04                     | .2310000                      | .01                        | .229.40                   |
| 30000.00         | .1311592                | .04                     | .1990000                      | .01                        | .229.70                   |
| 31000.00         | .1113107                | .04                     | .1730000                      | .01                        | .229.20                   |
| 32000.00         | .9772331                | .03                     | .1480000                      | .01                        | .229.20                   |
| 33000.00         | .8449407                | .03                     | .1270000                      | .01                        | .231.40                   |
| 34000.00         | .7292814                | .03                     | .1090000                      | .01                        | .233.00                   |
| 35000.00         | .6107610                | .03                     | .9440000                      | .02                        | .235.10                   |
| 36000.00         | .5146218                | .03                     | .7980000                      | .02                        | .238.50                   |
| 37000.00         | .4275060                | .03                     | .6800000                      | .02                        | .243.12                   |
| 38000.00         | .3414623                | .03                     | .5840000                      | .02                        | .246.62                   |
| 39000.00         | .2614036                | .03                     | .5040000                      | .02                        | .246.50                   |
| 40000.00         | .1959740                | .03                     | .4380000                      | .02                        | .250.60                   |
| 41000.00         | .1579773                | .03                     | .3890000                      | .02                        | .251.30                   |
| 42000.00         | .1311715                | .03                     | .3310000                      | .02                        | .253.50                   |
| 43000.00         | .2119826                | .03                     | .2870000                      | .02                        | .255.20                   |
| 44000.00         | .1857131                | .03                     | .2500000                      | .02                        | .258.60                   |
| 45000.00         | .1524653                | .03                     | .2150000                      | .02                        | .263.00                   |
| 46000.00         | .1449481                | .03                     | .1880000                      | .02                        | .266.00                   |
| 47000.00         | .1265322                | .03                     | .1650000                      | .02                        | .267.10                   |
| 48000.00         | .1114757                | .03                     | .1460000                      | .02                        | .266.00                   |
| 49000.00         | .9295659                | .02                     | .1280000                      | .02                        | .257.40                   |
| 50000.00         | .7665955                | .02                     | .1130000                      | .02                        | .266.90                   |
| 51000.00         | .7599772                | .02                     | .9999999                      | .02                        | .265.90                   |
| 52000.00         | .6719447                | .02                     | .9889999                      | .02                        | .263.40                   |
| 53000.00         | .5619513                | .02                     | .7889999                      | .02                        | .261.10                   |
| 54000.00         | .5194573                | .02                     | .5989999                      | .02                        | .259.10                   |
| 55000.00         | .4572957                | .02                     | .6173999                      | .02                        | .257.40                   |
| 56000.00         | .4121303                | .02                     | .5449999                      | .02                        | .256.10                   |
| 57000.00         | .3516711                | .02                     | .4810000                      | .02                        | .254.50                   |
| 58000.00         | .3079747                | .02                     | .4280000                      | .02                        | .250.30                   |
| 59000.00         | .2597112                | .02                     | .3777999                      | .02                        | .247.30                   |
| 60000.00         | .2464674                | .02                     | .3319000                      | .02                        | .246.40                   |
| 61000.00         | .2057165                | .02                     | .2913000                      | .02                        | .244.40                   |
| 62000.00         | .1795620                | .02                     | .2580000                      | .02                        | .240.90                   |
| 63000.00         | .1546570                | .02                     | .2270000                      | .02                        | .236.10                   |
| 64000.00         | .1446556                | .02                     | .1980000                      | .02                        | .237.10                   |
| 65000.00         | .1159237                | .02                     | .1740000                      | .02                        | .234.10                   |
| 66000.00         | .1111917                | .02                     | .1520000                      | .02                        | .230.50                   |
| 67000.00         | .9745946                | .01                     | .1340000                      | .02                        | .227.40                   |
| 68000.00         | .7516046                | .01                     | .1170000                      | .02                        | .224.60                   |
| 69000.00         | .6402799                | .01                     | .1200000                      | .02                        | .221.20                   |
| 70000.00         | .5572875                | .01                     | .9890000                      | .02                        | .216.30                   |
| 71000.00         | .4772041                | .01                     | .7879999                      | .02                        | .210.90                   |
| 72000.00         | .4053000                | .01                     | .6269999                      | .02                        | .202.10                   |
| 73000.00         | .3426148                | .01                     | .5119999                      | .02                        | .195.20                   |
| 74000.00         | .2877975                | .01                     | .5119999                      | .02                        | .186.60                   |
| 75000.00         | .2309000                | .01                     | .4580000                      | .02                        | .181.00                   |
| 76000.00         | .1906436                | .01                     | .3890000                      | .02                        | .179.30                   |
| 77000.00         | .1553197                | .01                     | .3309999                      | .02                        | .174.50                   |
| 78000.00         | .1359489                | .01                     | .2900000                      | .02                        | .169.20                   |
| 79000.00         | .1119008                | .01                     | .2340000                      | .02                        | .166.70                   |
| 80000.00         | .9159247                | .00                     | .1940000                      | .02                        | .164.40                   |
| 81000.00         | .7466053                | .00                     | .1610000                      | .02                        | .161.40                   |
| 82000.00         | .5666162                | .00                     | .1320000                      | .02                        | .160.10                   |
| 83000.00         | .4632927                | .00                     | .1060000                      | .02                        | .159.00                   |
| 84000.00         | .3900671                | .00                     | .8779999                      | .02                        | .158.50                   |
| 85000.00         | .3240733                | .00                     | .7119999                      | .02                        | .158.50                   |
| 86000.00         | .2624846                | .00                     | .5789999                      | .02                        | .168.00                   |
| 87000.00         | .2133153                | .00                     | .4699999                      | .02                        | .157.60                   |
| 88000.00         | .1710658                | .00                     | .3800000                      | .02                        | .157.50                   |
| 89000.00         | .1386552                | .00                     | .3089999                      | .02                        | .157.10                   |
| 90000.00         | .1127907                | .00                     | .2400000                      | .02                        | .157.80                   |
| 91000.00         | .9145015                | .01                     | .2000000                      | .02                        | .159.50                   |
| 92000.00         | .7615039                | .01                     | .1600000                      | .02                        | .161.30                   |
| 93000.00         | .5677500                | .01                     | .1270000                      | .02                        | .166.80                   |
| 94000.00         | .4096257                | .01                     | .1010000                      | .02                        | .172.00                   |
| 95000.00         | .4132993                | .01                     | .7079999                      | .02                        | .190.50                   |
| 96000.00         | .3453049                | .01                     | .6299999                      | .02                        | .190.90                   |
| 97000.00         | .2906427                | .01                     | .5079999                      | .02                        | .199.80                   |
| 98000.00         | .2479796                | .01                     | .4209999                      | .02                        | .204.70                   |
| 99000.00         | .2105403                | .01                     | .3510000                      | .02                        | .208.50                   |
| 100000.00        | .1799952                | .01                     | .2979999                      | .02                        | .210.20                   |
| 101000.00        | .1553207                | .01                     | .2519999                      | .02                        | .212.60                   |
| 102000.00        | .1315692                | .01                     | .2150000                      | .02                        | .213.20                   |
| 103000.00        | .1127907                | .01                     | .1830000                      | .02                        | .214.70                   |
| 104000.00        | .9679204                | .02                     | .1550000                      | .02                        | .217.50                   |
| 105000.00        | .8193915                | .02                     | .1320000                      | .02                        | .219.50                   |
| 106000.00        | .7159411                | .02                     | .1120000                      | .02                        | .222.50                   |
| 107000.00        | .6186157                | .02                     | .9549999                      | .02                        | .225.40                   |
| 108000.00        | .5346227                | .02                     | .8099999                      | .02                        | .229.80                   |
| 109000.00        | .4633619                | .02                     | .6899999                      | .02                        | .233.90                   |
| 110000.00        | .4026335                | .02                     | .5849998                      | .02                        | .240.00                   |

# FIGURE 28

## CHURCHILL, 7 AUGUST 1966, 1735 GMT.

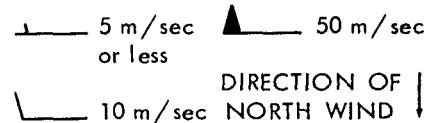
| WIND DIRECTION<br>degrees | WIND SPEED<br>m/sec | ERROR<br>m/sec ( $\pm$ ) | TEMPERATURE<br>degrees Kelvin | ERROR<br>degrees Kelvin ( $\pm$ ) | HEIGHT<br>meters |
|---------------------------|---------------------|--------------------------|-------------------------------|-----------------------------------|------------------|
| 125.30                    | 12.74               | 2.64                     | 245.62                        | 1.20                              | 34809.30         |
| 92.51                     | 9.14                | 3.96                     | 264.69                        | 1.87                              | 40633.20         |
| 109.12                    | 18.01               | 3.97                     | 274.00                        | 1.62                              | 45016.85         |
| 105.69                    | 20.41               | 3.59                     | 269.27                        | 1.40                              | 48664.40         |
| 79.48                     | 11.83               | 7.11                     | 268.52                        | 2.12                              | 52218.19         |
| 62.39                     | 30.09               | 7.22                     | 262.28                        | 2.23                              | 55681.75         |
| 99.26                     | 31.69               | 14.05                    | 253.77                        | 3.56                              | 59057.30         |
| 64.09                     | 67.17               | 21.84                    | 238.17                        | 4.27                              | 62347.30         |
| 108.13                    | 64.78               | 18.14                    | 235.11                        | 3.41                              | 66063.99         |
| 104.61                    | 73.52               | 16.54                    | 213.72                        | 3.17                              | 70182.84         |
| 76.50                     | 85.79               | 39.20                    | 190.90                        | 5.63                              | 74135.19         |
| 94.80                     | 60.25               | 49.15                    | 177.28                        | 7.19                              | 77941.40         |
| 209.94                    | 51.77               | 19.09                    | 191.31                        | 7.27                              | 81603.90         |
| 222.52                    | 146.15              | 41.69                    | 176.45                        | 6.25                              | 84669.40         |
| 211.88                    | 44.71               | 16.65                    | 151.33                        | 4.31                              | 87199.50         |
| 313.85                    | 33.76               | 55.88                    | 134.60                        | 6.34                              | 89645.20         |



WIND COMPONENTS  
m/sec

| HEIGHT<br>meters | SOUTH<br>component (+) | WEST<br>component (+) |
|------------------|------------------------|-----------------------|
| 35000.00         | 7.13                   | -10.35                |
| 40000.00         | 1.15                   | -9.26                 |
| 45000.00         | 5.87                   | -16.98                |
| 50000.00         | 2.63                   | -16.63                |
| 55000.00         | -11.62                 | -23.70                |
| 60000.00         | -4.77                  | -39.62                |
| 65000.00         | 5.98                   | -61.23                |
| 70000.00         | 18.61                  | -70.71                |
| 75000.00         | -14.33                 | -78.10                |
| 80000.00         | 27.42                  | -11.77                |
| 85000.00         | 98.60                  | 88.94                 |

### LEGEND

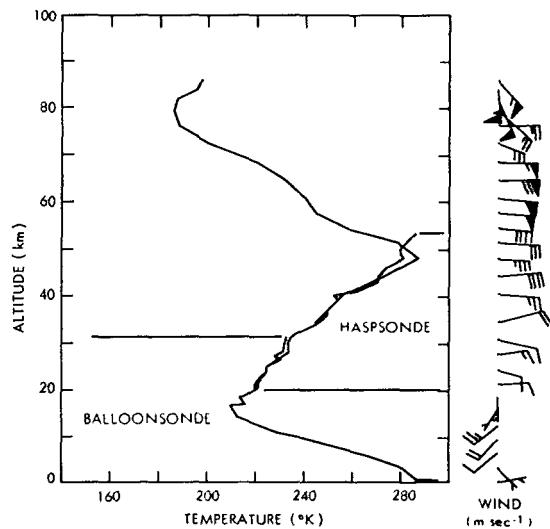


| HEIGHT<br>meters | PRESSURE<br>nt/sq meter |    | DENSITY<br>kg/cu meter | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>(%) | DENSITY<br>deviation<br>(%) |
|------------------|-------------------------|----|------------------------|-------------------------------|------------------------------|-----------------------------|
| 30000.00         | .1368079                | 04 | .2018365               | 01-                           | 236.14                       | 14.29                       |
| 31000.00         | .1185930                | 04 | .1735151               | 01-                           | 238.11                       | 14.99                       |
| 32000.00         | .1029290                | 04 | .1493604               | 01-                           | 240.08                       | 15.77                       |
| 33000.00         | .8944147                | 03 | .1287316               | 01-                           | 242.05                       | 16.56                       |
| 34000.00         | .7781325                | 03 | .1110906               | 01-                           | 244.02                       | 17.29                       |
| 35000.00         | .6778037                | 03 | .9582083               | 02-                           | 246.24                       | 17.96                       |
| 36000.00         | .5913389                | 03 | .8256425               | 02-                           | 249.51                       | 18.61                       |
| 37000.00         | .5168412                | 03 | .7122859               | 02-                           | 252.79                       | 19.29                       |
| 38000.00         | .4525362                | 03 | .6156860               | 02-                           | 256.06                       | 19.99                       |
| 39000.00         | .3969153                | 03 | .5331966               | 02-                           | 259.33                       | 20.70                       |
| 40000.00         | .3487180                | 03 | .4626110               | 02-                           | 262.61                       | 21.44                       |
| 41000.00         | .3068461                | 03 | .4026900               | 02-                           | 265.46                       | 22.18                       |
| 42000.00         | .2703355                | 03 | .3519587               | 02-                           | 267.52                       | 22.89                       |
| 43000.00         | .2384173                | 03 | .3079582               | 02-                           | 269.71                       | 23.56                       |
| 44000.00         | .2104830                | 03 | .2697513               | 02-                           | 271.84                       | 24.18                       |
| 45000.00         | .1860092                | 03 | .2365376               | 02-                           | 273.96                       | 24.75                       |
| 46000.00         | .1644203                | 03 | .2100338               | 02-                           | 272.72                       | 25.18                       |
| 47000.00         | .1452591                | 03 | .1864432               | 02-                           | 271.42                       | 25.38                       |
| 48000.00         | .1282598                | 03 | .1654142               | 02-                           | 270.13                       | 25.38                       |
| 49000.00         | .1131961                | 03 | .1464926               | 02-                           | 269.19                       | 25.30                       |
| 50000.00         | .9987850                | 02 | .1293598               | 02-                           | 268.98                       | 25.19                       |
| 51000.00         | .8812286                | 02 | .1142245               | 02-                           | 268.77                       | 25.07                       |
| 52000.00         | .7774580                | 02 | .1008536               | 02-                           | 268.56                       | 24.93                       |
| 53000.00         | .6856696                | 02 | .8943070               | 03-                           | 267.10                       | 24.77                       |
| 54000.00         | .6042772                | 02 | .7934263               | 03-                           | 265.30                       | 24.61                       |
| 55000.00         | .5321997                | 02 | .7035040               | 03-                           | 263.50                       | 24.46                       |
| 56000.00         | .4681449                | 02 | .6237405               | 03-                           | 261.47                       | 24.31                       |
| 57000.00         | .4114247                | 02 | .5535057               | 03-                           | 258.95                       | 24.14                       |
| 58000.00         | .3611347                | 02 | .4906257               | 03-                           | 256.43                       | 23.94                       |
| 59000.00         | .3165967                | 02 | .4343891               | 03-                           | 253.91                       | 23.69                       |
| 60000.00         | .2770447                | 02 | .3871582               | 03-                           | 249.29                       | 23.34                       |
| 61000.00         | .2418318                | 02 | .3445030               | 03-                           | 244.55                       | 22.80                       |
| 62000.00         | .2105423                | 02 | .3058604               | 03-                           | 239.81                       | 22.08                       |
| 63000.00         | .1829412                | 02 | .2682059               | 03-                           | 237.63                       | 21.35                       |
| 64000.00         | .1588252                | 02 | .2336566               | 03-                           | 235.81                       | 20.77                       |
| 65000.00         | .1378262                | 02 | .2034693               | 03-                           | 235.98                       | 20.41                       |
| 66000.00         | .1195476                | 02 | .1771043               | 03-                           | 235.16                       | 20.26                       |
| 67000.00         | .1035192                | 02 | .1566300               | 03-                           | 230.25                       | 20.18                       |
| 68000.00         | .8935625                | 01 | .1383214               | 03-                           | 225.05                       | 20.02                       |
| 69000.00         | .7687002                | 01 | .1219245               | 03-                           | 219.86                       | 19.75                       |
| 70000.00         | .6589412                | 01 | .1069723               | 03-                           | 214.66                       | 19.36                       |
| 71000.00         | .5626538                | 01 | .8378710               | 04-                           | 209.00                       | 18.82                       |
| 72000.00         | .4783582                | 01 | .8200309               | 04-                           | 203.22                       | 18.10                       |
| 73000.00         | .4048145                | 01 | .7142190               | 04-                           | 197.15                       | 17.18                       |
| 74000.00         | .3400027                | 01 | .6196009               | 04-                           | 191.68                       | 16.04                       |
| 75000.00         | .2858174                | 01 | .5302547               | 04-                           | 187.80                       | 15.78                       |
| 76000.00         | .2386527                | 01 | .4516630               | 04-                           | 184.22                       | 15.46                       |
| 77000.00         | .1988937                | 01 | .3835674               | 04-                           | 180.65                       | 15.21                       |
| 78000.00         | .1650612                | 01 | .3239589               | 04-                           | 177.50                       | 15.95                       |
| 79000.00         | .1370404                | 01 | .2632919               | 04-                           | 181.33                       | 16.14                       |
| 80000.00         | .1142262                | 01 | .2142114               | 04-                           | 185.16                       | 16.18                       |
| 81000.00         | .9557095                | 00 | .1761681               | 04-                           | 188.20                       | 16.86                       |
| 82000.00         | .8012662                | 00 | .1473235               | 04-                           | 189.32                       | 17.76                       |
| 83000.00         | .6704031                | 00 | .1265614               | 04-                           | 184.54                       | 18.43                       |
| 84000.00         | .5582854                | 00 | .1082357               | 04-                           | 179.62                       | 19.57                       |
| 85000.00         | .4622053                | 00 | .9282993               | 05-                           | 173.16                       | 20.04                       |
| 86000.00         | .3791517                | 00 | .8051230               | 05-                           | 163.23                       | 20.55                       |
| 87000.00         | .3071998                | 00 | .6808289               | 05-                           | 153.31                       | 21.62                       |
| 88000.00         | .2459008                | 00 | .5873545               | 05-                           | 145.85                       | 23.55                       |
| 89000.00         | .1946615                | 00 | .1878476               | 05-                           | 139.01                       | 24.46                       |

# FIGURE 29

## WALLOPS ISLAND, 7 AUG. 1966, 2046 GMT.

| WIND DIRECTION<br>degrees | WIND SPEED<br>m/sec | ERROR<br>m/sec ( $\pm$ ) | TEMPERATURE<br>degrees Kelvin | ERROR<br>degrees Kelvin ( $\pm$ ) | HEIGHT<br>meters |
|---------------------------|---------------------|--------------------------|-------------------------------|-----------------------------------|------------------|
| 74.45                     | 17.78               | .87                      | 245.40                        | .37                               | 34539.15         |
| 94.61                     | 26.41               | 1.05                     | 257.21                        | .48                               | 40188.19         |
| 83.73                     | 41.53               | 1.11                     | 272.49                        | .51                               | 44372.15         |
| 92.39                     | 37.05               | .84                      | 287.38                        | .46                               | 47803.80         |
| 96.52                     | 31.52               | .68                      | 279.54                        | .38                               | 51117.55         |
| 101.74                    | 39.30               | .62                      | 259.30                        | .28                               | 54316.05         |
| 97.32                     | 51.88               | .67                      | 244.85                        | .22                               | 57394.55         |
| 99.23                     | 59.30               | .68                      | 240.11                        | .22                               | 60854.95         |
| 87.62                     | 72.02               | .99                      | 232.50                        | .32                               | 64663.55         |
| 91.52                     | 53.05               | 1.14                     | 221.02                        | .38                               | 68296.04         |
| 119.74                    | 32.40               | 1.01                     | 200.49                        | .29                               | 72197.94         |
| 87.67                     | 25.52               | 1.63                     | 188.62                        | .49                               | 75918.64         |
| 129.66                    | 25.09               | 2.74                     | 186.78                        | .55                               | 79029.34         |
| 156.65                    | 51.69               | 5.31                     | 188.02                        | .81                               | 81636.39         |
| 178.22                    | 52.96               | 7.05                     | 195.60                        | .99                               | 83775.39         |
| 141.57                    | 55.58               | 6.70                     | 198.35                        | 1.01                              | 85818.99         |



WIND COMPONENTS  
m/sec

| HEIGHT<br>meters | SOUTH<br>component (+) | WEST<br>component (+) |
|------------------|------------------------|-----------------------|
| 35000.00         | -4.20                  | -17.87                |
| 40000.00         | 1.89                   | -26.01                |
| 45000.00         | -3.42                  | -40.50                |
| 50000.00         | 2.89                   | -33.23                |
| 55000.00         | 7.68                   | -41.35                |
| 60000.00         | 8.79                   | -56.78                |
| 65000.00         | -2.58                  | -70.20                |
| 70000.00         | 7.81                   | -42.15                |
| 75000.00         | 3.18                   | -26.15                |
| 80000.00         | 27.72                  | -19.75                |
| 85000.00         | 47.30                  | -21.36                |

### LEGEND

— 5 m/sec or less      ▲ 50 m/sec

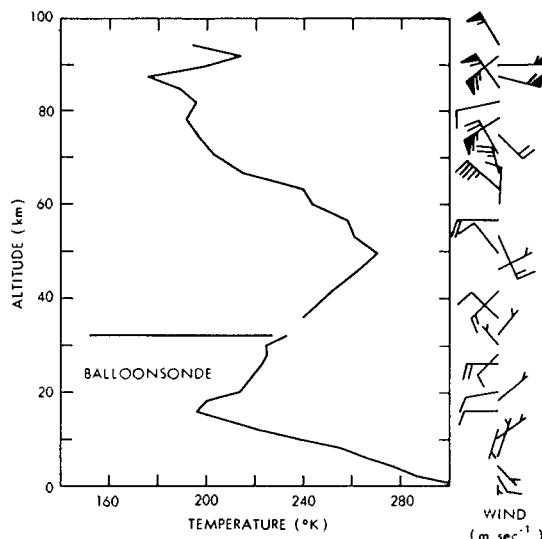
— 10 m/sec      ↓ NORTH WIND

| HEIGHT<br>meters | PRESSURE<br>nt/sq meter |    | DENSITY<br>kg/cu meter | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>(%) | DENSITY<br>deviation<br>(%) |
|------------------|-------------------------|----|------------------------|-------------------------------|------------------------------|-----------------------------|
| 30000.00         | .1314885                | 04 | .1952288               | 01-                           | 234.64                       | 9.84                        |
| 31000.00         | .1139227                | 04 | .1674556               | 01-                           | 237.01                       | 10.46                       |
| 32000.00         | .9884888                | 03 | .1438593               | 01-                           | 239.38                       | 11.18                       |
| 33000.00         | .8589343                | 03 | .1237786               | 01-                           | 241.75                       | 11.94                       |
| 34000.00         | .7474159                | 03 | .1066618               | 01-                           | 244.12                       | 12.66                       |
| 35000.00         | .6512555                | 03 | .9209331               | 02-                           | 246.36                       | 13.24                       |
| 36000.00         | .5681757                | 03 | .7966909               | 02-                           | 248.45                       | 13.97                       |
| 37000.00         | .4962824                | 03 | .6900767               | 02-                           | 250.54                       | 14.55                       |
| 38000.00         | .4339917                | 03 | .5984687               | 02-                           | 252.63                       | 15.07                       |
| 39000.00         | .3799550                | 03 | .5196530               | 02-                           | 254.73                       | 15.55                       |
| 40000.00         | .3330217                | 03 | .4517563               | 02-                           | 256.81                       | 15.97                       |
| 41000.00         | .2923030                | 03 | .3914039               | 02-                           | 260.17                       | 16.39                       |
| 42000.00         | .2570211                | 03 | .3393984               | 02-                           | 263.82                       | 16.84                       |
| 43000.00         | .2264067                | 03 | .2948916               | 02-                           | 267.47                       | 17.33                       |
| 44000.00         | .1997897                | 03 | .2567198               | 02-                           | 271.12                       | 17.87                       |
| 45000.00         | .1766211                | 03 | .2235813               | 02-                           | 275.21                       | 18.45                       |
| 46000.00         | .1564377                | 03 | .1949561               | 02-                           | 279.55                       | 19.10                       |
| 47000.00         | .1388252                | 03 | .1703614               | 02-                           | 283.89                       | 19.83                       |
| 48000.00         | .1233904                | 03 | .1498238               | 02-                           | 286.91                       | 20.62                       |
| 49000.00         | .1096905                | 03 | .1342971               | 02-                           | 284.55                       | 21.42                       |
| 50000.00         | .9741952                | 02 | .1202739               | 02-                           | 282.18                       | 22.11                       |
| 51000.00         | .8643805                | 02 | .1076189               | 02-                           | 279.81                       | 22.68                       |
| 52000.00         | .7656085                | 02 | .9736140               | 03-                           | 273.95                       | 23.03                       |
| 53000.00         | .6762988                | 02 | .8803775               | 03-                           | 267.62                       | 23.06                       |
| 54000.00         | .5956601                | 02 | .7941856               | 03-                           | 261.29                       | 22.83                       |
| 55000.00         | .5231749                | 02 | .7117330               | 03-                           | 256.08                       | 22.37                       |
| 56000.00         | .4583676                | 02 | .6352088               | 03-                           | 251.39                       | 21.72                       |
| 57000.00         | .4006054                | 02 | .5657220               | 03-                           | 246.70                       | 20.88                       |
| 58000.00         | .3494300                | 02 | .4988765               | 03-                           | 244.02                       | 19.92                       |
| 59000.00         | .3044587                | 02 | .4371274               | 03-                           | 242.64                       | 18.95                       |
| 60000.00         | .2650793                | 02 | .3827509               | 03-                           | 241.27                       | 18.02                       |
| 61000.00         | .2306154                | 02 | .3350176               | 03-                           | 239.81                       | 17.11                       |
| 62000.00         | .2004385                | 02 | .2936242               | 03-                           | 237.82                       | 16.22                       |
| 63000.00         | .1740123                | 02 | .2570706               | 03-                           | 235.82                       | 15.42                       |
| 64000.00         | .1508953                | 02 | .2248232               | 03-                           | 233.82                       | 14.74                       |
| 65000.00         | .1306794                | 02 | .1967126               | 03-                           | 231.43                       | 14.16                       |
| 66000.00         | .1129805                | 02 | .1724262               | 03-                           | 228.27                       | 13.65                       |
| 67000.00         | .9748512                | 01 | .1508675               | 03-                           | 225.11                       | 13.18                       |
| 68000.00         | .8394348                | 01 | .1317613               | 03-                           | 221.95                       | 12.75                       |
| 69000.00         | .7209436                | 01 | .1155783               | 03-                           | 217.31                       | 12.31                       |
| 70000.00         | .6170380                | 01 | .1013746               | 03-                           | 212.05                       | 11.77                       |
| 71000.00         | .5260731                | 01 | .8862845               | 04-                           | 206.79                       | 11.10                       |
| 72000.00         | .4467014                | 01 | .7722098               | 04-                           | 201.52                       | 10.29                       |
| 73000.00         | .3779529                | 01 | .6652469               | 04-                           | 197.93                       | 9.41                        |
| 74000.00         | .3188794                | 01 | .5704629               | 04-                           | 194.74                       | 8.55                        |
| 75000.00         | .2682991                | 01 | .4879695               | 04-                           | 191.55                       | 7.73                        |
| 76000.00         | .2251225                | 01 | .4159084               | 04-                           | 188.57                       | 6.97                        |
| 77000.00         | .1885910                | 01 | .3495126               | 04-                           | 187.98                       | 6.39                        |
| 78000.00         | .1579084                | 01 | .2935718               | 04-                           | 187.39                       | 6.14                        |
| 79000.00         | .1321508                | 01 | .2464622               | 04-                           | 186.80                       | 6.21                        |
| 80000.00         | .1105935                | 01 | .2057679               | 04-                           | 187.24                       | 6.8                         |
| 81000.00         | .9259828                | 00 | .1718494               | 04-                           | 187.72                       | 7.41                        |
| 82000.00         | .7761077                | 00 | .1428243               | 04-                           | 189.31                       | 8.25                        |
| 83000.00         | .6520676                | 00 | .1177935               | 04-                           | 192.85                       | 9.36                        |
| 84000.00         | .5495018                | 00 | .9772055               | 05-                           | 195.90                       | 10.80                       |
| 85000.00         | .4639809                | 00 | .8194926               | 05-                           | 197.24                       | 12.48                       |

# FIGURE 30

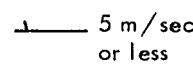
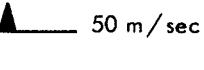
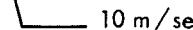
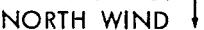
## NATAL, 7 AUGUST 1966, 2326 GMT.

| WIND DIRECTION<br>degrees | WIND SPEED<br>m/sec | ERROR<br>m/sec ( $\pm$ ) | TEMPERATURE<br>degrees Kelvin | ERROR<br>degrees Kelvin ( $\pm$ ) | HEIGHT<br>meters |
|---------------------------|---------------------|--------------------------|-------------------------------|-----------------------------------|------------------|
| 312.70                    | 9.59                | 3.02                     | 240.29                        | .58                               | 35920.00         |
| 222.16                    | 13.22               | 1.18                     | 252.49                        | .23                               | 41656.00         |
| 63.13                     | 3.27                | 5.03                     | 262.90                        | .89                               | 45959.35         |
| 321.86                    | 8.76                | 2.58                     | 269.68                        | 1.91                              | 49542.80         |
| 159.21                    | 12.85               | 10.41                    | 261.37                        | 1.79                              | 53040.70         |
| 269.19                    | 19.44               | 5.52                     | 257.75                        | .89                               | 56454.10         |
| 2.35                      | 12.38               | 6.42                     | 244.06                        | 1.27                              | 59767.30         |
| 312.74                    | 45.95               | 9.81                     | 240.37                        | 1.87                              | 62982.00         |
| 350.73                    | 24.02               | 10.06                    | 215.46                        | 2.14                              | 66618.84         |
| 335.66                    | 21.30               | 8.84                     | 202.93                        | 2.31                              | 70633.34         |
| 135.40                    | 18.64               | 11.78                    | 196.89                        | 1.64                              | 74498.24         |
| 236.79                    | 66.48               | 10.12                    | 192.41                        | 1.63                              | 78237.99         |
| 257.52                    | 11.90               | 9.96                     | 196.36                        | 1.99                              | 81817.44         |
| 331.16                    | 55.40               | 9.77                     | 189.25                        | 1.85                              | 84810.80         |
| 110.91                    | 60.99               | 14.92                    | 176.45                        | 2.20                              | 87277.15         |
| 39.12                     | 53.30               | 63.14                    | 200.53                        | 9.97                              | 89653.50         |
| 233.46                    | 66.01               | 63.34                    | 214.46                        | 15.41                             | 91929.55         |
| 327.42                    | 56.59               | 19.71                    | 194.57                        | 11.72                             | 94075.80         |



| HEIGHT<br>meters | WIND COMPONENTS<br>m/sec | SOUTH<br>component (+) | WEST<br>component (+) |
|------------------|--------------------------|------------------------|-----------------------|
| 40000.00         | 5.06                     | 8.31                   |                       |
| 45000.00         | 1.03                     | -.29                   |                       |
| 50000.00         | -4.42                    | 4.10                   |                       |
| 55000.00         | 5.27                     | 9.21                   |                       |
| 60000.00         | -13.72                   | 1.97                   |                       |
| 65000.00         | -27.03                   | 17.17                  |                       |
| 70000.00         | -20.08                   | 8.00                   |                       |
| 75000.00         | 16.37                    | -3.86                  |                       |
| 80000.00         | 19.75                    | 33.96                  |                       |
| 85000.00         | -43.13                   | 20.50                  |                       |
| 90000.00         | 5.29                     | -37.10                 |                       |

### LEGEND

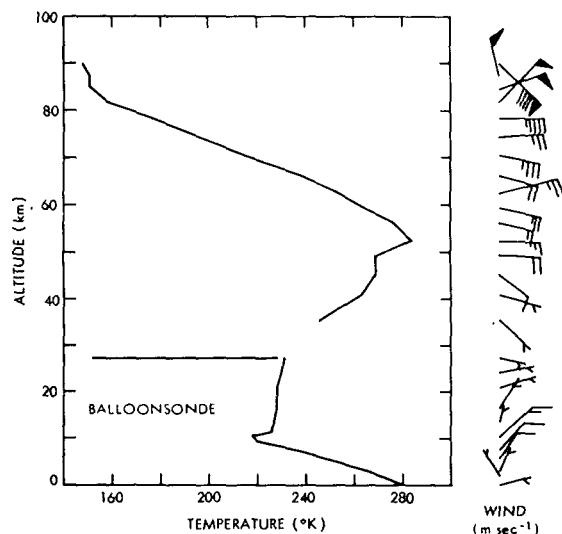
   
 

| HEIGHT<br>meters | PRESSURE<br>nt/sq meter | DENSITY<br>kg/cu meter | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>(%) | DENSITY<br>deviation<br>(%) |
|------------------|-------------------------|------------------------|-------------------------------|------------------------------|-----------------------------|
| 30000.00         | .1200000                | 04                     | .1856728                      | 01-                          | 225.16                      |
| 31000.00         | .1034416                | 04                     | .1570616                      | 01-                          | 229.44                      |
| 32000.00         | .8941760                | 03                     | .1332775                      | 01-                          | 233.73                      |
| 33000.00         | .7714349                | 03                     | .1145754                      | 01-                          | 237.47                      |
| 34000.00         | .6714511                | 03                     | .9864871                      | 02-                          | 237.12                      |
| 35000.00         | .5827637                | 03                     | .8302784                      | 02-                          | 238.77                      |
| 36000.00         | .5063112                | 03                     | .7335425                      | 02-                          | 240.46                      |
| 37000.00         | .4403961                | 03                     | .6324587                      | 02-                          | 242.58                      |
| 38000.00         | .3835453                | 03                     | .5460287                      | 02-                          | 244.71                      |
| 39000.00         | .3344474                | 03                     | .4720300                      | 02-                          | 246.84                      |
| 40000.00         | .2919897                | 03                     | .4085868                      | 02-                          | 248.96                      |
| 41000.00         | .2592270                | 03                     | .3541200                      | 02-                          | 251.09                      |
| 42000.00         | .2233616                | 03                     | .3071826                      | 02-                          | 253.32                      |
| 43000.00         | .1957207                | 03                     | .2666214                      | 02-                          | 255.74                      |
| 44000.00         | .1717200                | 03                     | .2317344                      | 02-                          | 258.16                      |
| 45000.00         | .1508542                | 03                     | .2016842                      | 02-                          | 260.58                      |
| 46000.00         | .1326865                | 03                     | .1757768                      | 02-                          | 262.98                      |
| 47000.00         | .1168733                | 03                     | .1536708                      | 02-                          | 264.87                      |
| 48000.00         | .1029713                | 03                     | .1344787                      | 02-                          | 266.76                      |
| 49000.00         | .9023846                | 02                     | .1177989                      | 02-                          | 268.65                      |
| 50000.00         | .8017140                | 02                     | .1039889                      | 02-                          | 268.59                      |
| 51000.00         | .7272050                | 02                     | .9254817                      | 03-                          | 266.21                      |
| 52000.00         | .6231611                | 02                     | .8228344                      | 03-                          | 263.84                      |
| 53000.00         | .5484995                | 02                     | .7328245                      | 03-                          | 261.46                      |
| 54000.00         | .4823909                | 02                     | .6454918                      | 03-                          | 260.35                      |
| 55000.00         | .4240390                | 02                     | .5697322                      | 03-                          | 259.29                      |
| 56000.00         | .3725636                | 02                     | .5026270                      | 03-                          | 258.23                      |
| 57000.00         | .3270369                | 02                     | .4459350                      | 03-                          | 255.49                      |
| 58000.00         | .2865782                | 02                     | .3971918                      | 03-                          | 251.36                      |
| 59000.00         | .2505859                | 02                     | .3531131                      | 03-                          | 247.23                      |
| 60000.00         | .2186705                | 02                     | .3124850                      | 03-                          | 243.79                      |
| 61000.00         | .1905835                | 02                     | .2736359                      | 03-                          | 242.64                      |
| 62000.00         | .1660029                | 02                     | .2354761                      | 03-                          | 241.49                      |
| 63000.00         | .1444996                | 02                     | .2095396                      | 03-                          | 240.24                      |
| 64000.00         | .1254881                | 02                     | .1873109                      | 03-                          | 233.39                      |
| 65000.00         | .1065259                | 02                     | .1668892                      | 03-                          | 226.54                      |
| 66000.00         | .9344530                | 01                     | .1481748                      | 03-                          | 212.70                      |
| 67000.00         | .8012113                | 01                     | .1302682                      | 03-                          | 214.27                      |
| 68000.00         | .6848995                | 01                     | .1130035                      | 03-                          | 211.15                      |
| 69000.00         | .5841351                | 01                     | .9762445                      | 04-                          | 208.02                      |
| 70000.00         | .4970229                | 01                     | .8450400                      | 04-                          | 204.90                      |
| 71000.00         | .4219736                | 01                     | .7264836                      | 04-                          | 202.35                      |
| 72000.00         | .3576774                | 01                     | .6205849                      | 04-                          | 200.79                      |
| 73000.00         | .3028019                | 01                     | .5204975                      | 04-                          | 199.22                      |
| 74000.00         | .2560227                | 01                     | .4512384                      | 04-                          | 197.66                      |
| 75000.00         | .2162104                | 01                     | .3837492                      | 04-                          | 196.28                      |
| 76000.00         | .1823954                | 01                     | .3257197                      | 04-                          | 195.08                      |
| 77000.00         | .1537160                | 01                     | .2762008                      | 04-                          | 193.88                      |
| 78000.00         | .1294156                | 01                     | .2330833                      | 04-                          | 192.69                      |
| 79000.00         | .1089319                | 01                     | .1963804                      | 04-                          | 193.24                      |
| 80000.00         | .9176283                | 00                     | .1644868                      | 04-                          | 194.35                      |
| 81000.00         | .7737922                | 00                     | .1379190                      | 04-                          | 195.46                      |
| 82000.00         | .6529852                | 00                     | .1161973                      | 04-                          | 195.93                      |
| 83000.00         | .5506062                | 00                     | .9910608                      | 05-                          | 193.55                      |
| 84000.00         | .4633296                | 00                     | .8443346                      | 05-                          | 191.17                      |
| 85000.00         | .3889700                | 00                     | .7197810                      | 05-                          | 188.26                      |
| 86000.00         | .3253163                | 00                     | .6190543                      | 05-                          | 183.07                      |
| 87000.00         | .2707002                | 00                     | .5301505                      | 05-                          | 177.88                      |
| 88000.00         | .2253452                | 00                     | .4271910                      | 05-                          | 183.77                      |
| 89000.00         | .1890591                | 00                     | .3396755                      | 05-                          | 193.90                      |
| 90000.00         | .1599573                | 00                     | .2749222                      | 05-                          | 202.64                      |
| 91000.00         | .1361634                | 00                     | .2272251                      | 05-                          | 208.76                      |
| 92000.00         | .1164089                | 00                     | .1896842                      | 05-                          | 213.80                      |
| 93000.00         | .9936578                | 01-                    | .1692473                      | 05-                          | 204.53                      |
| 94000.00         | .8420198                | 01-                    | .1502240                      | 05-                          | 195.27                      |

# FIGURE 31

## BARROW, 14 AUGUST 1966, 2035 GMT.

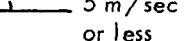
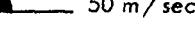
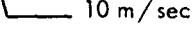
| WIND DIRECTION<br>degrees | WIND SPEED<br>m/sec | ERROR<br>m/sec ( $\pm$ ) | TEMPERATURE<br>degrees Kelvin | ERROR<br>degrees Kelvin ( $\pm$ ) | HEIGHT<br>meters |
|---------------------------|---------------------|--------------------------|-------------------------------|-----------------------------------|------------------|
| 131.40                    | 7.30                | 1.58                     | 245.75                        | .19                               | 35389.90         |
| 114.51                    | 6.43                | 2.23                     | 263.39                        | .30                               | 41196.45         |
| 130.95                    | 11.84               | 2.24                     | 269.18                        | .30                               | 45553.00         |
| 95.55                     | 22.18               | 1.67                     | 269.30                        | .24                               | 49172.85         |
| 92.68                     | 15.51               | 2.00                     | 283.65                        | .28                               | 52709.70         |
| 108.41                    | 14.99               | 3.34                     | 276.42                        | .52                               | 56158.55         |
| 106.63                    | 24.61               | 5.13                     | 263.82                        | .62                               | 59520.25         |
| 77.84                     | 25.00               | 5.20                     | 252.93                        | .63                               | 62799.90         |
| 109.41                    | 20.13               | 3.59                     | 237.52                        | .37                               | 66496.60         |
| 104.51                    | 33.58               | 6.00                     | 214.69                        | .55                               | 70581.80         |
| 87.67                     | 25.30               | 6.63                     | 195.04                        | .55                               | 74534.85         |
| 91.63                     | 46.34               | 3.86                     | 176.60                        | .29                               | 78343.10         |
| 43.90                     | 48.65               | 9.20                     | 158.22                        | .52                               | 81980.24         |
| 73.65                     | 50.03               | 16.73                    | 150.88                        | 1.00                              | 85033.14         |
| 350.48                    | 48.97               | 16.74                    | 150.68                        | .95                               | 87542.94         |
| 135.28                    | 89.18               | 47.49                    | 148.03                        | 1.80                              | 89966.65         |



WIND COMPONENTS  
m/sec

| HEIGHT<br>meters | SOUTH<br>component (+) | WEST<br>component (+) |
|------------------|------------------------|-----------------------|
| 40000.00         | 3.17                   | -5.72                 |
| 45000.00         | 7.11                   | -8.55                 |
| 50000.00         | 1.81                   | -20.54                |
| 55000.00         | 3.38                   | -14.65                |
| 60000.00         | 5.24                   | -23.71                |
| 65000.00         | 1.84                   | -21.19                |
| 70000.00         | 8.16                   | -30.58                |
| 75000.00         | -.74                   | -27.85                |
| 80000.00         | -15.25                 | -40.58                |
| 85000.00         | -14.31                 | -47.84                |

### LEGEND

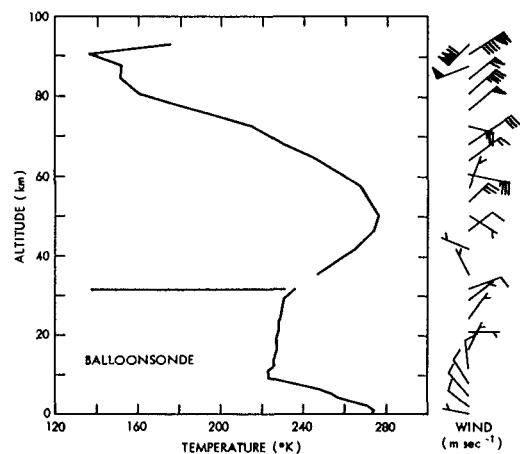
 5 m/sec or less  
 50 m/sec  
 10 m/sec  
 DIRECTION OF  
NORTH WIND

| HEIGHT<br>meters | PRESSURE<br>nt./sq. meter | DENSITY<br>kg./cu meter | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>(%) | DENSITY<br>deviation<br>(%) |        |       |
|------------------|---------------------------|-------------------------|-------------------------------|------------------------------|-----------------------------|--------|-------|
| 27000.00         | .2057740                  | 04                      | .3092949                      | 01-                          | 231.78                      | 9.15   | 5.56  |
| 28000.00         | .1778360                  | 04                      | .2653051                      | 01-                          | 233.44                      | 10.03  | 5.83  |
| 29000.00         | .1538576                  | 04                      | .2270845                      | 01-                          | 235.11                      | 10.65  | 6.14  |
| 30000.00         | .1332544                  | 04                      | .1960663                      | 01-                          | 236.77                      | 11.32  | 6.49  |
| 31000.00         | .1155317                  | 04                      | .1688025                      | 01-                          | 238.44                      | 12.02  | 6.89  |
| 32000.00         | .1002700                  | 04                      | .1454878                      | 01-                          | 240.10                      | 12.78  | 7.33  |
| 33000.00         | .8711319                  | 03                      | .1255276                      | 01-                          | 241.77                      | 13.53  | 8.46  |
| 34000.00         | .7575567                  | 03                      | .1084204                      | 01-                          | 243.43                      | 14.19  | 9.65  |
| 35000.00         | .6595123                  | 03                      | .9374225                      | 02-                          | 245.10                      | 14.77  | 10.76 |
| 36000.00         | .5748244                  | 03                      | .8087902                      | 02-                          | 247.60                      | 15.30  | 11.43 |
| 37000.00         | .5017986                  | 03                      | .6974843                      | 02-                          | 250.64                      | 15.82  | 11.85 |
| 38000.00         | .4387859                  | 03                      | .6025254                      | 02-                          | 253.67                      | 16.34  | 12.28 |
| 39000.00         | .3843153                  | 03                      | .5215442                      | 02-                          | 256.71                      | 16.87  | 12.72 |
| 40000.00         | .3371456                  | 03                      | .0521809                      | 02-                          | 259.75                      | 17.41  | 13.16 |
| 41000.00         | .2962280                  | 03                      | .3927095                      | 02-                          | 262.79                      | 17.95  | 13.61 |
| 42000.00         | .2605875                  | 03                      | .3432871                      | 02-                          | 264.45                      | 18.46  | 14.62 |
| 43000.00         | .2291103                  | 03                      | .3007053                      | 02-                          | 265.78                      | 18.89  | 15.70 |
| 44000.00         | .2020094                  | 03                      | .2635896                      | 02-                          | 267.11                      | 19.23  | 16.68 |
| 45000.00         | .1781528                  | 03                      | .2312152                      | 02-                          | 268.44                      | 19.48  | 17.58 |
| 46000.00         | .1571370                  | 03                      | .2033646                      | 02-                          | 269.19                      | 19.64  | 18.64 |
| 47000.00         | .1386285                  | 03                      | .1793875                      | 02-                          | 269.22                      | 19.66  | 19.87 |
| 48000.00         | .1223075                  | 03                      | .1582471                      | 02-                          | 269.26                      | 19.56  | 20.18 |
| 49000.00         | .1079128                  | 03                      | .1396043                      | 02-                          | 269.29                      | 19.45  | 20.05 |
| 50000.00         | .9528961                  | 02                      | .1217544                      | 02-                          | 272.65                      | 19.44  | 18.56 |
| 51000.00         | .8428759                  | 02                      | .1061182                      | 02-                          | 276.71                      | 19.62  | 17.01 |
| 52000.00         | .7469182                  | 02                      | .9267879                      | 03-                          | 280.77                      | 20.02  | 15.70 |
| 53000.00         | .6628101                  | 02                      | .8158209                      | 03-                          | 283.04                      | 20.61  | 14.85 |
| 54000.00         | .5882152                  | 02                      | .7294188                      | 03-                          | 280.00                      | 21.30  | 15.52 |
| 55000.00         | .5215684                  | 02                      | .6516380                      | 03-                          | 278.84                      | 21.39  | 16.20 |
| 56000.00         | .4620705                  | 02                      | .5816776                      | 03-                          | 276.74                      | 22.70  | 16.89 |
| 57000.00         | .4088720                  | 02                      | .5212751                      | 02-                          | 273.26                      | 23.37  | 18.14 |
| 58000.00         | .3612228                  | 02                      | .4669306                      | 03-                          | 269.51                      | 23.97  | 19.46 |
| 59000.00         | .3185858                  | 02                      | .4176236                      | 03-                          | 265.76                      | 24.47  | 20.72 |
| 60000.00         | .2805057                  | 02                      | .3726733                      | 03-                          | 262.22                      | 24.88  | 21.82 |
| 61000.00         | .2465734                  | 02                      | .3317926                      | 03-                          | 258.90                      | 25.21  | 22.75 |
| 62000.00         | .2163903                  | 02                      | .2949658                      | 03-                          | 255.58                      | 25.47  | 22.25 |
| 63000.00         | .1895843                  | 02                      | .2617984                      | 03-                          | 252.09                      | 25.75  | 23.28 |
| 64000.00         | .1657667                  | 02                      | .2329332                      | 03-                          | 247.92                      | 26.05  | 23.65 |
| 65000.00         | .1446180                  | 02                      | .2066890                      | 03-                          | 243.76                      | 26.34  | 24.02 |
| 66000.00         | .1258763                  | 02                      | .1830318                      | 03-                          | 239.59                      | 26.62  | 24.40 |
| 67000.00         | .1092783                  | 02                      | .1622031                      | 03-                          | 234.71                      | 26.87  | 25.11 |
| 68000.00         | .9057060                  | 01                      | .1437967                      | 03-                          | 229.12                      | 27.02  | 26.14 |
| 69000.00         | .8155446                  | 01                      | .1271062                      | 03-                          | 223.53                      | 27.05  | 27.10 |
| 70000.00         | .7006986                  | 01                      | .1120078                      | 03-                          | 217.94                      | 26.92  | 27.95 |
| 71000.00         | .5997412                  | 01                      | .9827331                      | 04-                          | 212.61                      | 26.66  | 28.55 |
| 72000.00         | .5114015                  | 01                      | .8580409                      | 04-                          | 207.64                      | 26.26  | 28.84 |
| 73000.00         | .4344154                  | 01                      | .7467488                      | 04-                          | 202.66                      | 25.75  | 29.04 |
| 74000.00         | .3675457                  | 01                      | .6476871                      | 04-                          | 197.69                      | 25.11  | 29.14 |
| 75000.00         | .3096730                  | 01                      | .5596063                      | 04-                          | 192.78                      | 24.34  | 29.09 |
| 76000.00         | .2597840                  | 01                      | .4815496                      | 04-                          | 187.94                      | 23.44  | 28.89 |
| 77000.00         | .2169472                  | 01                      | .4127817                      | 04-                          | 183.10                      | 22.39  | 28.59 |
| 78000.00         | .1803112                  | 01                      | .3523959                      | 04-                          | 178.25                      | 21.20  | 28.14 |
| 79000.00         | .1490978                  | 01                      | .2997703                      | 04-                          | 173.27                      | 19.83  | 27.61 |
| 80000.00         | .1226083                  | 01                      | .2539171                      | 04-                          | 168.22                      | 18.27  | 27.02 |
| 81000.00         | .1002315                  | 01                      | .2140047                      | 04-                          | 163.16                      | 16.27  | 28.76 |
| 82000.00         | .8142871                  | 00                      | .1793563                      | 04-                          | 158.16                      | 13.58  | 29.77 |
| 83000.00         | .6583503                  | 00                      | .1472463                      | 04-                          | 155.76                      | 10.41  | 28.04 |
| 84000.00         | .5305548                  | 00                      | .1205229                      | 04-                          | 153.36                      | 6.98   | 26.03 |
| 85000.00         | .4261407                  | 00                      | .9834458                      | 05-                          | 150.95                      | 3.30   | 23.62 |
| 86000.00         | .3416623                  | 00                      | .7893029                      | 05-                          | 150.80                      | 4.2-   | 19.28 |
| 87000.00         | .2739041                  | 00                      | .6331009                      | 05-                          | 150.72                      | 4.04-  | 15.02 |
| 88000.00         | .2194984                  | 00                      | .5091822                      | 05-                          | 150.18                      | 7.56-  | 11.20 |
| 89000.00         | .1756984                  | 00                      | .4105683                      | 05-                          | 149.08                      | 11.06- | 7.76  |

# FIGURE 32

## BARROW, 15 AUGUST 1966, 0808 GMT.

| WIND DIRECTION<br>degrees | WIND SPEED<br>m/sec | ERROR<br>m/sec ( $\pm$ ) | TEMPERATURE<br>degrees Kelvin | ERROR<br>degrees Kelvin ( $\pm$ ) | HEIGHT<br>meters |
|---------------------------|---------------------|--------------------------|-------------------------------|-----------------------------------|------------------|
| 345.16                    | 1.91                | 1.56                     | 246.76                        | .28                               | 35630.25         |
| 304.17                    | 5.98                | 1.64                     | 265.03                        | .57                               | 41691.45         |
| 53.35                     | 10.75               | 3.16                     | 274.08                        | .73                               | 46250.75         |
| 119.72                    | 1.97                | 7.34                     | 275.98                        | 1.19                              | 50038.85         |
| 48.38                     | 24.55               | 6.38                     | 271.99                        | 1.42                              | 53745.50         |
| 7.87                      | .98                 | 18.09                    | 268.28                        | 2.84                              | 57365.75         |
| 102.79                    | 33.59               | 15.39                    | 258.11                        | 2.82                              | 60887.30         |
| 61.27                     | 17.47               | 5.61                     | 245.93                        | 1.08                              | 64332.29         |
| 63.68                     | 30.63               | 10.55                    | 229.82                        | 1.89                              | 68219.60         |
| 106.72                    | 25.67               | 13.32                    | 214.96                        | 1.86                              | 72514.04         |
| 54.95                     | 48.11               | 12.44                    | 187.49                        | 1.78                              | 76657.89         |
| 48.53                     | 43.26               | 14.65                    | 161.85                        | 1.91                              | 80672.60         |
| 56.97                     | 60.15               | 20.81                    | 152.18                        | 2.36                              | 84535.25         |
| 248.24                    | 52.30               | 50.00                    | 151.75                        | 4.16                              | 87754.20         |
| 60.51                     | 141.75              | 77.22                    | 137.30                        | 8.63                              | 90410.35         |
| 222.33                    | 118.86              | 133.87                   | 175.52                        | 16.53                             | 92988.74         |



WIND COMPONENTS  
m/sec

| HEIGHT<br>meters | SOUTH<br>component (+) | WEST<br>component (+) |
|------------------|------------------------|-----------------------|
| 40000.00         | -2.12                  | 2.51                  |
| 45000.00         | -5.26                  | -5.35                 |
| 50000.00         | .90                    | -1.78                 |
| 55000.00         | -10.99                 | -12.03                |
| 60000.00         | 5.32                   | -24.54                |
| 65000.00         | -9.28                  | -17.40                |
| 70000.00         | -4.88                  | -26.26                |
| 75000.00         | -13.62                 | -33.46                |
| 80000.00         | -28.47                 | -33.58                |
| 85000.00         | -25.25                 | -36.13                |
| 90000.00         | -56.00                 | -96.81                |

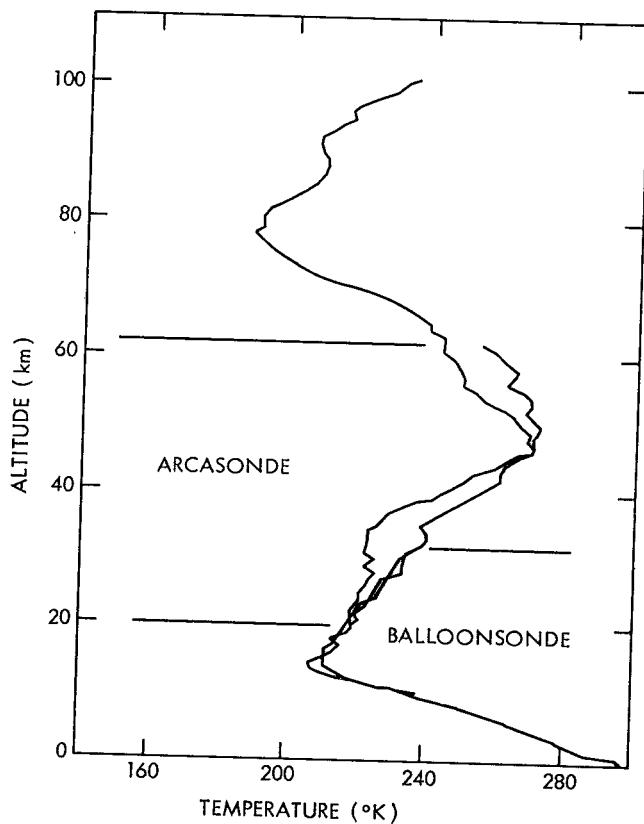
### LEGEND

— 5 m/sec or less      ▲ 50 m/sec

└ 10 m/sec      DIRECTION OF NORTH WIND ↓

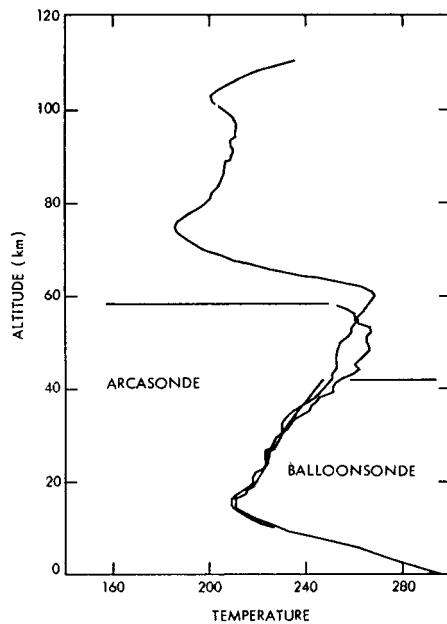
| HEIGHT<br>meters | PRESSURE<br>nt/sq meter |     | DENSITY<br>kg/cu meter | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>(%) | DENSITY<br>deviation<br>(%) |
|------------------|-------------------------|-----|------------------------|-------------------------------|------------------------------|-----------------------------|
| 30000.00         | .1305633                | 04  | .1955973               | 01-                           | 232.55                       | 9.07                        |
| 31000.00         | .1129363                | 04  | .1673738               | 01-                           | 235.07                       | 9.51                        |
| 32000.00         | .9784502                | 03  | .1434679               | 01-                           | 237.59                       | 10.05                       |
| 33000.00         | .8490262                | 03  | .1231822               | 01-                           | 240.12                       | 10.65                       |
| 34000.00         | .7378480                | 03  | .1059383               | 01-                           | 242.64                       | 11.22                       |
| 35000.00         | .6421880                | 03  | .9125449               | 02-                           | 245.16                       | 11.76                       |
| 36000.00         | .5597777                | 03  | .7867591               | 02-                           | 247.87                       | 12.28                       |
| 37000.00         | .4887326                | 03  | .6786530               | 02-                           | 250.88                       | 12.80                       |
| 38000.00         | .4274142                | 03  | .5864601               | 02-                           | 253.20                       | 13.33                       |
| 39000.00         | .3743065                | 03  | .5076864               | 02-                           | 256.91                       | 13.85                       |
| 40000.00         | .3284757                | 03  | .4402517               | 02-                           | 259.93                       | 14.39                       |
| 41000.00         | .2886340                | 03  | .3824175               | 02-                           | 262.94                       | 14.93                       |
| 42000.00         | .2539896                | 03  | .3330997               | 02-                           | 265.64                       | 15.46                       |
| 43000.00         | .2237637                | 03  | .2912820               | 02-                           | 267.62                       | 15.96                       |
| 44000.00         | .1973272                | 03  | .2549767               | 02-                           | 269.61                       | 16.42                       |
| 45000.00         | .1741814                | 03  | .2234233               | 02-                           | 271.60                       | 16.82                       |
| 46000.00         | .1538963                | 03  | .1959707               | 02-                           | 273.58                       | 17.17                       |
| 47000.00         | .1360668                | 03  | .1727161               | 02-                           | 274.45                       | 17.45                       |
| 48000.00         | .1203445                | 03  | .1524813               | 02-                           | 274.95                       | 17.64                       |
| 49000.00         | .1064668                | 03  | .1346530               | 02-                           | 275.45                       | 17.85                       |
| 50000.00         | .9421379                | 02  | .1189404               | 02-                           | 275.95                       | 18.09                       |
| 51000.00         | .8336441                | 02  | .1056322               | 02-                           | 274.94                       | 18.31                       |
| 52000.00         | .7373291                | 02  | .9379521               | 03-                           | 273.86                       | 18.48                       |
| 53000.00         | .6518513                | 02  | .8324885               | 03-                           | 272.78                       | 18.61                       |
| 54000.00         | .5760259                | 02  | .7385290               | 03-                           | 271.72                       | 18.78                       |
| 55000.00         | .5087984                | 02  | .5458034               | 03-                           | 270.70                       | 19.01                       |
| 56000.00         | .4492231                | 02  | .5803274               | 03-                           | 269.67                       | 19.29                       |
| 57000.00         | .3964509                | 02  | .5141058               | 03-                           | 268.65                       | 19.63                       |
| 58000.00         | .3496279                | 02  | .4571412               | 03-                           | 266.44                       | 19.99                       |
| 59000.00         | .3079748                | 02  | .4079916               | 03-                           | 263.56                       | 20.32                       |
| 60000.00         | .2709160                | 02  | .3620733               | 03-                           | 260.67                       | 20.61                       |
| 61000.00         | .2379816                | 02  | .3217112               | 03-                           | 257.71                       | 20.85                       |
| 62000.00         | .2087157                | 02  | .2860723               | 03-                           | 254.17                       | 21.02                       |
| 63000.00         | .1827202                | 02  | .2539741               | 03-                           | 250.64                       | 21.20                       |
| 64000.00         | .1596673                | 02  | .2251060               | 03-                           | 247.10                       | 21.41                       |
| 65000.00         | .1392419                | 02  | .1994915               | 03-                           | 243.16                       | 21.64                       |
| 66000.00         | .1211564                | 02  | .1765897               | 03-                           | 239.02                       | 21.87                       |
| 67000.00         | .1051683                | 02  | .1559909               | 03-                           | 234.87                       | 22.10                       |
| 68000.00         | .9106434                | 01  | .1374971               | 03-                           | 230.73                       | 22.31                       |
| 69000.00         | .7866345                | 01  | .1206615               | 03-                           | 227.12                       | 22.54                       |
| 70000.00         | .6779853                | 01  | .1056052               | 03-                           | 223.66                       | 22.81                       |
| 71000.00         | .5830168                | 01  | .9223994               | 04-                           | 220.20                       | 23.12                       |
| 72000.00         | .5001777                | 01  | .8039752               | 04-                           | 216.74                       | 23.49                       |
| 73000.00         | .4278313                | 01  | .7039267               | 04-                           | 211.73                       | 23.85                       |
| 74000.00         | .3643737                | 01  | .6188912               | 04-                           | 205.11                       | 24.03                       |
| 75000.00         | .3087117                | 01  | .5418594               | 04-                           | 198.48                       | 23.96                       |
| 76000.00         | .2600979                | 01  | .4723035               | 04-                           | 191.85                       | 23.59                       |
| 77000.00         | .2178436                | 01  | .4095485               | 04-                           | 185.30                       | 22.90                       |
| 78000.00         | .1813190                | 01  | .3530511               | 04-                           | 178.92                       | 21.87                       |
| 79000.00         | .1499235                | 01  | .3027273               | 04-                           | 172.53                       | 20.49                       |
| 80000.00         | .1230857                | 01  | .2580908               | 04-                           | 166.14                       | 18.74                       |
| 81000.00         | .1003608                | 01  | .2171256               | 04-                           | 161.03                       | 16.42                       |
| 82000.00         | .8144066                | 00  | .1789746               | 04-                           | 158.52                       | 13.59                       |
| 83000.00         | .6587232                | 00  | .1470838               | 04-                           | 156.02                       | 10.48                       |
| 84000.00         | .5310112                | 00  | .1205005               | 04-                           | 153.52                       | 7.07                        |
| 85000.00         | .4269124                | 00  | .9777100               | 05-                           | 152.12                       | 3.49                        |
| 86000.00         | .3428627                | 00  | .7859193               | 05-                           | 151.98                       | .07-                        |
| 87000.00         | .2753279                | 00  | .6316765               | 05-                           | 151.85                       | 3.54-                       |
| 88000.00         | .2208582                | 00  | .5115577               | 05-                           | 150.41                       | 6.99-                       |
| 89000.00         | .1762654                | 00  | .4235936               | 05-                           | 144.96                       | 10.77-                      |
| 90000.00         | .1394777                | 00  | .3482575               | 05-                           | 139.52                       | 15.15-                      |
| 91000.00         | .1104711                | 00  | .2635386               | 05-                           | 146.03                       | 19.35-                      |
| 92000.00         | .8892075                | 01- | .1925795               | 05-                           | 160.86                       | 22.33-                      |

FIGURE 33  
WALLOPS ISLAND, 26 AUG. 1966, 1911 GMT.



| HEIGHT<br>meters | PRESSURE<br>at 1sq meter | DENSITY<br>kg/100 meter | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>(%) | DENSITY<br>deviation<br>(%) |
|------------------|--------------------------|-------------------------|-------------------------------|------------------------------|-----------------------------|
| 1000.00          | .3573745                 | .05                     | .4230000                      | 0                            | 236.60                      |
| 1100.00          | .3473736                 | .05                     | .3544000                      | 0                            | 225.50                      |
| 1200.00          | .3134143                 | .05                     | .3430                         | 0                            | 214.40                      |
| 1300.00          | .1713144                 | .05                     | .3200000                      | 0                            | 203.50                      |
| 1400.00          | .1346543                 | .05                     | .2600000                      | 0                            | 206.70                      |
| 1500.00          | .1713553                 | .05                     | .2170000                      | 0                            | 211.50                      |
| 1600.00          | .1115300                 | .05                     | .1820000                      | 0                            | 213.50                      |
| 1700.00          | .3830543                 | .04                     | .1540000                      | 0                            | 215.60                      |
| 1800.00          | .2145007                 | .04                     | .1300000                      | 0                            | 217.20                      |
| 1900.00          | .1050408                 | .04                     | .1110000                      | 0                            | 215.40                      |
| 2000.00          | .5455517                 | .04                     | .0440000                      | 01-                          | 213.60                      |
| 2100.00          | .5136347                 | .04                     | .0190000                      | 01-                          | 213.19                      |
| 2200.00          | .1372974                 | .04                     | .0050000                      | 01-                          | 215.60                      |
| 2300.00          | .3764350                 | .04                     | .5940000                      | 01-                          | 217.50                      |
| 2400.00          | .5213049                 | .04                     | .5050000                      | 01-                          | 221.40                      |
| 2500.00          | .2745441                 | .04                     | .4330000                      | 01-                          | 221.00                      |
| 2600.00          | .2359806                 | .04                     | .3690000                      | 01-                          | 222.50                      |
| 2700.00          | .2026500                 | .04                     | .3170000                      | 01-                          | 223.19                      |
| 2800.00          | .1746523                 | .04                     | .2700000                      | 01-                          | 225.50                      |
| 2900.00          | .1506545                 | .04                     | .2350000                      | 01-                          | 222.50                      |
| 30000.00         | .1290560                 | .04                     | .2000000                      | 01-                          | 224.90                      |
| 31000.00         | .1109242                 | .04                     | .1740000                      | 01-                          | 222.10                      |
| 32000.00         | .9532950                 | .03                     | .1490000                      | 01-                          | 222.80                      |
| 33000.00         | .9125995                 | .03                     | .1280000                      | 01-                          | 222.80                      |
| 34000.00         | .7630422                 | .03                     | .1100000                      | 01-                          | 222.90                      |
| 35000.00         | .5022158                 | .03                     | .9350000                      | 02-                          | 225.50                      |
| 36000.00         | .5225237                 | .03                     | .7990000                      | 02-                          | 227.30                      |
| 37000.00         | .4506206                 | .03                     | .6840000                      | 02-                          | 228.90                      |
| 38000.00         | .3693013                 | .03                     | .5790000                      | 02-                          | 233.60                      |
| 39000.00         | .3377056                 | .03                     | .4889999                      | 02-                          | 240.20                      |
| 40000.00         | .2933002                 | .03                     | .4170000                      | 02-                          | 244.50                      |
| 41000.00         | .2559790                 | .03                     | .3600000                      | 02-                          | 247.60                      |
| 42000.00         | .22339216                | .03                     | .3100000                      | 02-                          | 250.90                      |
| 43000.00         | .1944507                 | .03                     | .2680000                      | 02-                          | 253.80                      |
| 44000.00         | .1706526                 | .03                     | .2300000                      | 02-                          | 259.50                      |
| 45000.00         | .1506543                 | .03                     | .2000000                      | 02-                          | 262.40                      |
| 46000.00         | .1326557                 | .03                     | .1740000                      | 02-                          | 265.60                      |
| 47000.00         | .1170570                 | .03                     | .1510000                      | 02-                          | 270.00                      |
| 48000.00         | .1037248                 | .03                     | .1340000                      | 02-                          | 268.50                      |
| 49000.00         | .9119251                 | .02                     | .1180000                      | 02-                          | 269.00                      |
| 50000.00         | .8039339                 | .02                     | .1050000                      | 02-                          | 266.60                      |
| 51000.00         | .7073419                 | .02                     | .9290000                      | 03-                          | 265.30                      |
| 52000.00         | .6239487                 | .02                     | .8240000                      | 03-                          | 263.40                      |
| 53000.00         | .5479549                 | .02                     | .7390000                      | 03-                          | 258.19                      |
| 54000.00         | .4812938                 | .02                     | .6569999                      | 03-                          | 255.20                      |
| 55000.00         | .4122987                 | .02                     | .5790000                      | 03-                          | 253.20                      |
| 56000.00         | .3693029                 | .02                     | .5140000                      | 03-                          | 249.50                      |
| 57000.00         | .3226401                 | .02                     | .4500000                      | 03-                          | 249.60                      |
| 58000.00         | .2813102                 | .02                     | .3950000                      | 03-                          | 248.60                      |
| 59000.00         | .2466484                 | .02                     | .3450000                      | 03-                          | 247.90                      |
| 60000.00         | .2146490                 | .02                     | .3040000                      | 03-                          | 246.19                      |
| 61000.00         | .1866513                 | .02                     | .2680000                      | 03-                          | 243.50                      |
| 62000.00         | .1626533                 | .02                     | .2330000                      | 03-                          | 244.00                      |
| 63000.00         | .1426549                 | .02                     | .2030000                      | 03-                          | 244.00                      |
| 64000.00         | .1236565                 | .02                     | .1800000                      | 03-                          | 239.50                      |
| 65000.00         | .1077245                 | .02                     | .1570000                      | 03-                          | 238.80                      |
| 66000.00         | .9345398                 | .01                     | .1380000                      | 03-                          | 236.00                      |
| 67000.00         | .8125999                 | .01                     | .1210000                      | 03-                          | 233.40                      |
| 68000.00         | .7025089                 | .01                     | .1070000                      | 03-                          | 228.50                      |
| 69000.00         | .6052836                 | .01                     | .9459999                      | 04-                          | 223.50                      |
| 70000.00         | .5199572                 | .01                     | .8379999                      | 04-                          | 216.10                      |
| 71000.00         | .4439634                 | .01                     | .7360000                      | 04-                          | 210.40                      |
| 72000.00         | .3786356                 | .01                     | .6400000                      | 04-                          | 206.20                      |
| 73000.00         | .3213069                 | .01                     | .5580000                      | 04-                          | 200.70                      |
| 74000.00         | .2719775                 | .01                     | .4780000                      | 04-                          | 198.20                      |
| 75000.00         | .2293145                 | .01                     | .4100000                      | 04-                          | 194.90                      |
| 76000.00         | .1933174                 | .01                     | .3490000                      | 04-                          | 192.10                      |
| 77000.00         | .1626533                 | .01                     | .2969999                      | 04-                          | 190.30                      |
| 78000.00         | .1359888                 | .01                     | .2520000                      | 04-                          | 188.30                      |
| 79000.00         | .1142573                 | .01                     | .2080000                      | 04-                          | 191.20                      |
| 80000.00         | .9585878                 | .00                     | .1750000                      | 04-                          | 190.90                      |
| 81000.00         | .8052671                 | .00                     | .1460000                      | 04-                          | 192.19                      |
| 82000.00         | .6786108                 | .00                     | .1210000                      | 04-                          | 195.20                      |
| 83000.00         | .5719529                 | .00                     | .9999999                      | 05-                          | 199.39                      |
| 84000.00         | .4852934                 | .00                     | .8340000                      | 05-                          | 202.40                      |
| 85000.00         | .4119661                 | .00                     | .6990000                      | 05-                          | 205.00                      |
| 86000.00         | .3566378                 | .00                     | .5890000                      | 05-                          | 207.10                      |
| 87000.00         | .2986421                 | .00                     | .4990000                      | 05-                          | 208.10                      |
| 88000.00         | .2546457                 | .00                     | .4249999                      | 05-                          | 208.70                      |
| 89000.00         | .2173155                 | .00                     | .3630000                      | 05-                          | 208.30                      |
| 90000.00         | .1853181                 | .00                     | .3100000                      | 05-                          | 208.00                      |
| 91000.00         | .1573204                 | .00                     | .2649999                      | 05-                          | 207.19                      |
| 92000.00         | .1346556                 | .00                     | .2260000                      | 05-                          | 207.00                      |
| 93000.00         | .1145239                 | .00                     | .1900000                      | 05-                          | 210.00                      |
| 94000.00         | .9785863                 | .01-                    | .1600000                      | 05-                          | 213.10                      |
| 95000.00         | .8385977                 | .01-                    | .1350000                      | 05-                          | 216.30                      |
| 96000.00         | .7186076                 | .01-                    | .1160000                      | 05-                          | 215.00                      |
| 97000.00         | .6172826                 | .01-                    | .9810000                      | 06-                          | 218.30                      |
| 98000.00         | .5319562                 | .01-                    | .8299999                      | 06-                          | 223.00                      |
| 99000.00         | .4586290                 | .01-                    | .6999999                      | 06-                          | 228.30                      |
| 100000.00        | .3973006                 | .01-                    | .6000000                      | 06-                          | 230.50                      |
| 101000.00        | .3439717                 | .01-                    | .5100000                      | 06-                          | 235.00                      |

FIGURE 34  
WALLOPS ISLAND, 28 AUG. 1966, 0423 GMT.

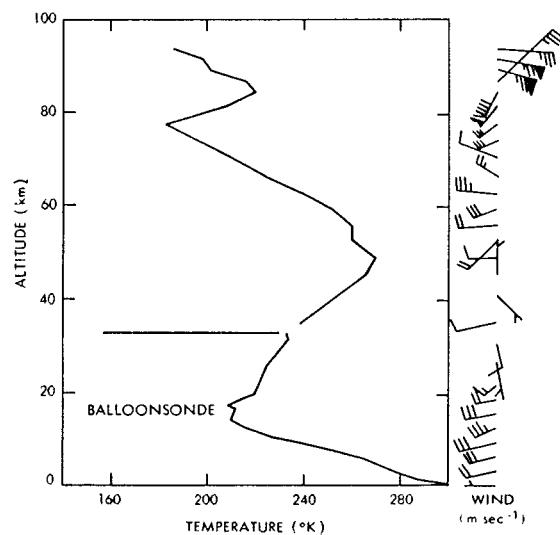


| PERIOD    | DEPTH         | DEPTH         | DEPTH         | DEPTH         | DEPTH         | DEPTH         |
|-----------|---------------|---------------|---------------|---------------|---------------|---------------|
| DEPTH     | ft./sq. meter |
| 10000.00  | 264.475       | 05            | 433.8422      | 00            | 377.10        | 00            |
| 11000.00  | 248.000       | 05            | 366.6666      | 00            | 311.00        | 00            |
| 12000.00  | 237.444       | 05            | 354.6666      | 00            | 291.00        | 00            |
| 13000.00  | 227.100       | 05            | 339.6666      | 00            | 271.50        | 00            |
| 14000.00  | 215.547       | 05            | 325.6666      | 00            | 251.50        | 00            |
| 15000.00  | 204.994       | 05            | 314.0000      | 00            | 239.50        | 00            |
| 16000.00  | 194.441       | 05            | 303.0000      | 00            | 229.50        | 00            |
| 17000.00  | 183.887       | 05            | 293.0000      | 00            | 219.50        | 00            |
| 18000.00  | 173.334       | 05            | 283.0000      | 00            | 209.50        | 00            |
| 19000.00  | 162.781       | 05            | 273.0000      | 00            | 199.50        | 00            |
| 20000.00  | 152.228       | 05            | 263.0000      | 00            | 189.50        | 00            |
| 21000.00  | 141.675       | 05            | 253.0000      | 00            | 179.50        | 00            |
| 22000.00  | 131.122       | 05            | 243.0000      | 00            | 169.50        | 00            |
| 23000.00  | 120.569       | 05            | 233.0000      | 00            | 159.50        | 00            |
| 24000.00  | 109.016       | 05            | 223.0000      | 00            | 149.50        | 00            |
| 25000.00  | 98.463        | 05            | 213.0000      | 00            | 139.50        | 00            |
| 26000.00  | 87.910        | 05            | 203.0000      | 00            | 129.50        | 00            |
| 27000.00  | 77.357        | 05            | 193.0000      | 00            | 119.50        | 00            |
| 28000.00  | 66.804        | 05            | 183.0000      | 00            | 109.50        | 00            |
| 29000.00  | 56.251        | 05            | 173.0000      | 00            | 99.50         | 00            |
| 30000.00  | 45.698        | 05            | 163.0000      | 00            | 89.50         | 00            |
| 31000.00  | 35.145        | 05            | 153.0000      | 00            | 79.50         | 00            |
| 32000.00  | 24.592        | 05            | 143.0000      | 00            | 69.50         | 00            |
| 33000.00  | 14.039        | 05            | 133.0000      | 00            | 59.50         | 00            |
| 34000.00  | 3.486         | 05            | 123.0000      | 00            | 49.50         | 00            |
| 35000.00  | 13.933        | 05            | 113.0000      | 00            | 39.50         | 00            |
| 36000.00  | 23.380        | 05            | 103.0000      | 00            | 29.50         | 00            |
| 37000.00  | 32.827        | 05            | 93.0000       | 00            | 19.50         | 00            |
| 38000.00  | 42.274        | 05            | 83.0000       | 00            | 9.50          | 00            |
| 39000.00  | 51.721        | 05            | 73.0000       | 00            | 0.50          | 00            |
| 40000.00  | 61.168        | 05            | 63.0000       | 00            | 0.50          | 00            |
| 41000.00  | 50.615        | 05            | 53.0000       | 00            | 0.50          | 00            |
| 42000.00  | 39.062        | 05            | 43.0000       | 00            | 0.50          | 00            |
| 43000.00  | 28.509        | 05            | 33.0000       | 00            | 0.50          | 00            |
| 44000.00  | 17.956        | 05            | 23.0000       | 00            | 0.50          | 00            |
| 45000.00  | 6.403         | 05            | 13.0000       | 00            | 0.50          | 00            |
| 46000.00  | 15.850        | 05            | 3.0000        | 00            | 0.50          | 00            |
| 47000.00  | 25.297        | 05            | 0.0000        | 00            | 0.50          | 00            |
| 48000.00  | 34.744        | 05            | 0.0000        | 00            | 0.50          | 00            |
| 49000.00  | 44.191        | 05            | 0.0000        | 00            | 0.50          | 00            |
| 50000.00  | 53.638        | 05            | 0.0000        | 00            | 0.50          | 00            |
| 51000.00  | 63.085        | 05            | 0.0000        | 00            | 0.50          | 00            |
| 52000.00  | 72.532        | 05            | 0.0000        | 00            | 0.50          | 00            |
| 53000.00  | 81.979        | 05            | 0.0000        | 00            | 0.50          | 00            |
| 54000.00  | 91.426        | 05            | 0.0000        | 00            | 0.50          | 00            |
| 55000.00  | 100.873       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 56000.00  | 110.320       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 57000.00  | 119.767       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 58000.00  | 129.214       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 59000.00  | 138.661       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 60000.00  | 148.108       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 61000.00  | 157.555       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 62000.00  | 167.002       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 63000.00  | 176.449       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 64000.00  | 185.896       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 65000.00  | 195.343       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 66000.00  | 204.790       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 67000.00  | 214.237       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 68000.00  | 223.684       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 69000.00  | 233.131       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 70000.00  | 242.578       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 71000.00  | 252.025       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 72000.00  | 261.472       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 73000.00  | 270.919       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 74000.00  | 280.366       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 75000.00  | 289.813       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 76000.00  | 299.260       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 77000.00  | 308.707       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 78000.00  | 318.154       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 79000.00  | 327.591       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 80000.00  | 337.038       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 81000.00  | 346.475       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 82000.00  | 355.922       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 83000.00  | 365.369       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 84000.00  | 374.806       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 85000.00  | 384.243       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 86000.00  | 393.680       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 87000.00  | 403.117       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 88000.00  | 412.554       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 89000.00  | 421.991       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 90000.00  | 431.428       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 91000.00  | 440.865       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 92000.00  | 440.302       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 93000.00  | 449.739       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 94000.00  | 459.176       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 95000.00  | 468.613       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 96000.00  | 477.050       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 97000.00  | 486.487       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 98000.00  | 495.924       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 99000.00  | 505.361       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 100000.00 | 514.798       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 101000.00 | 524.235       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 102000.00 | 533.672       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 103000.00 | 543.109       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 104000.00 | 552.546       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 105000.00 | 561.983       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 106000.00 | 571.420       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 107000.00 | 580.857       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 108000.00 | 580.294       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 109000.00 | 589.731       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 110000.00 | 599.168       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 111000.00 | 608.605       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 112000.00 | 617.042       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 113000.00 | 626.479       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 114000.00 | 635.916       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 115000.00 | 645.353       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 116000.00 | 654.790       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 117000.00 | 664.227       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 118000.00 | 673.664       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 119000.00 | 683.101       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 120000.00 | 692.538       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 121000.00 | 701.975       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 122000.00 | 711.412       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 123000.00 | 720.849       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 124000.00 | 720.286       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 125000.00 | 729.723       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 126000.00 | 739.160       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 127000.00 | 748.597       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 128000.00 | 757.934       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 129000.00 | 767.371       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 130000.00 | 776.808       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 131000.00 | 786.245       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 132000.00 | 795.682       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 133000.00 | 805.119       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 134000.00 | 814.556       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 135000.00 | 823.993       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 136000.00 | 833.430       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 137000.00 | 842.867       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 138000.00 | 852.304       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 139000.00 | 861.741       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 140000.00 | 871.178       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 141000.00 | 880.615       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 142000.00 | 889.952       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 143000.00 | 899.389       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 144000.00 | 908.826       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 145000.00 | 918.263       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 146000.00 | 927.699       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 147000.00 | 937.136       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 148000.00 | 946.573       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 149000.00 | 955.910       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 150000.00 | 965.347       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 151000.00 | 974.784       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 152000.00 | 984.221       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 153000.00 | 993.658       | 05            | 0.0000        | 00            | 0.50          | 00            |
| 154000.00 | 1003.095      | 05            | 0.0000        | 00            | 0.50          | 00            |
| 155000.00 | 1012.532      | 05            | 0.0000        | 00            | 0.50          | 00            |
| 156000.00 | 1021.969      | 05            | 0.0000        | 00            | 0.50          | 00            |
| 157000.00 | 1031.406      | 05            | 0.0000        | 00            | 0.50          | 00            |
| 158000.00 | 1040.843      | 05            | 0.0000        | 00            | 0.50          | 00            |
| 159000.00 | 1049.280      | 05            | 0.0000        | 00            | 0.50          | 00            |
| 160000.00 | 1058.717      | 05            | 0.0000        | 00            | 0.50          | 00            |
| 161000.00 | 1068.154      | 05            | 0.0000        | 00            | 0.50          | 00            |
| 162000.00 | 1077.591      | 05            | 0.0000        | 00            | 0.50          | 00            |
| 163000.00 | 1087.028      | 05            | 0.0000        | 00            | 0.50          | 00            |
| 164000.00 | 1096.465      | 05            | 0.0000        | 00            | 0.50          | 00            |
| 165000.00 | 1105.902      | 05            | 0.0000        | 00            | 0.50          | 00            |
| 166000.00 | 1115.339      | 05            | 0.0000        | 00            | 0.50          | 00            |

# FIGURE 35

## WALLOPS ISLAND, 30 SEPT. 1966, 1735 GMT.

| WIND DIRECTION<br>degrees | WIND SPEED<br>m/sec | ERROR<br>m/sec ( $\pm$ ) | TEMPERATURE<br>degrees Kelvin | ERROR<br>degrees Kelvin ( $\pm$ ) | HEIGHT<br>meters |
|---------------------------|---------------------|--------------------------|-------------------------------|-----------------------------------|------------------|
| 255.54                    | 8.67                | .90                      | 238.94                        | .38                               | 35065.00         |
| 135.72                    | 4.28                | 1.09                     | 253.79                        | .51                               | 40836.75         |
| 359.02                    | 2.89                | 1.67                     | 266.03                        | .65                               | 45174.90         |
| 266.74                    | 8.14                | 1.23                     | 269.55                        | .55                               | 48775.50         |
| 226.60                    | 21.69               | 1.48                     | 260.06                        | .48                               | 52284.60         |
| 264.93                    | 19.69               | 1.10                     | 259.66                        | .47                               | 55710.40         |
| 245.05                    | 27.98               | 1.14                     | 251.55                        | .38                               | 59047.95         |
| 274.94                    | 35.93               | .85                      | 240.02                        | .33                               | 62294.50         |
| 298.17                    | 25.98               | .94                      | 224.02                        | .24                               | 65960.95         |
| 281.46                    | 12.07               | 1.28                     | 210.74                        | .33                               | 70017.35         |
| 252.50                    | 28.92               | 1.28                     | 196.11                        | .33                               | 73920.20         |
| 243.37                    | 25.85               | 1.29                     | 182.57                        | .28                               | 77691.05         |
| 211.77                    | 57.81               | 1.60                     | 207.74                        | .34                               | 81313.34         |
| 197.19                    | 42.01               | 3.10                     | 219.72                        | .62                               | 84344.64         |
| 45.34                     | 36.13               | 4.97                     | 215.71                        | 1.03                              | 86843.35         |
| 110.33                    | 72.89               | 5.90                     | 201.64                        | 1.06                              | 89253.45         |
| 100.15                    | 75.14               | 5.83                     | 198.07                        | 1.01                              | 91575.85         |
| 94.54                     | 35.59               | 7.08                     | 186.02                        | 1.13                              | 93763.90         |



WIND COMPONENTS  
m/sec

| HEIGHT<br>meters | SOUTH<br>component (+) | WEST<br>component (+) |
|------------------|------------------------|-----------------------|
| 40000.00         | 2.93                   | -1.34                 |
| 45000.00         | -2.65                  | -.07                  |
| 50000.00         | 5.50                   | 10.78                 |
| 55000.00         | 4.46                   | 18.81                 |
| 60000.00         | 7.43                   | 28.42                 |
| 65000.00         | -9.86                  | 26.28                 |
| 70000.00         | -2.44                  | 11.87                 |
| 75000.00         | 9.52                   | 26.30                 |
| 80000.00         | 35.53                  | 27.78                 |
| 85000.00         | 22.94                  | 2.41                  |
| 90000.00         | 21.44                  | -70.15                |

### LEGEND

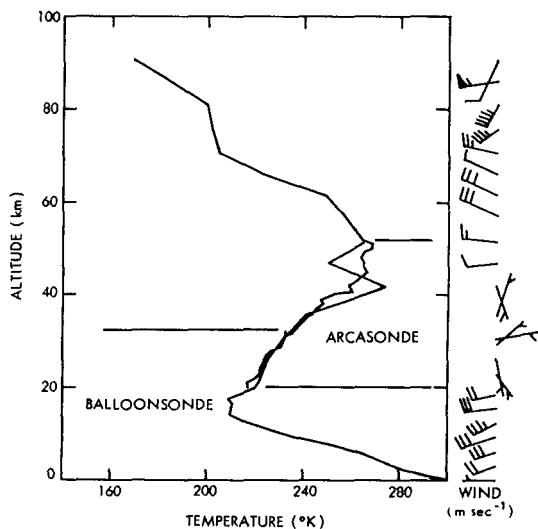
— 5 m/sec or less      ▲ 50 m/sec  
 └ 10 m/sec      DIRECTION OF NORTH WIND ↓

| HEIGHT<br>meters | PRESSURE<br>nt/sq meter |     | DENSITY<br>kg/cu meter | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>(%) | DENSITY<br>deviation<br>(%) |
|------------------|-------------------------|-----|------------------------|-------------------------------|------------------------------|-----------------------------|
| 30000.00         | .1250667                | 04  | .1883184               | 01-                           | 231.37                       | 4.48                        |
| 31000.00         | .1081109                | 04  | .1617427               | 01-                           | 232.86                       | 4.83                        |
| 32000.00         | .9354518                | 03  | .1390588               | 01-                           | 234.35                       | 5.21                        |
| 33000.00         | .8102005                | 03  | .1196765               | 01-                           | 235.85                       | 5.59                        |
| 34000.00         | .7023881                | 03  | .1030981               | 01-                           | 237.34                       | 5.87                        |
| 35000.00         | .6094953                | 03  | .8890333               | 02-                           | 238.84                       | 6.07                        |
| 36000.00         | .5295352                | 03  | .7643922               | 02-                           | 241.34                       | 6.22                        |
| 37000.00         | .4607621                | 03  | .6581028               | 02-                           | 243.91                       | 6.35                        |
| 38000.00         | .4015238                | 03  | .5675083               | 02-                           | 246.48                       | 6.46                        |
| 39000.00         | .3504166                | 03  | .4901588               | 02-                           | 249.06                       | 6.56                        |
| 40000.00         | .3062555                | 03  | .4240075               | 02-                           | 251.63                       | 6.65                        |
| 41000.00         | .2680407                | 03  | .3672854               | 02-                           | 254.24                       | 6.73                        |
| 42000.00         | .2349367                | 03  | .3183897               | 02-                           | 257.06                       | 6.80                        |
| 43000.00         | .2062261                | 03  | .2764456               | 02-                           | 259.89                       | 6.88                        |
| 44000.00         | .1812864                | 03  | .2404032               | 02-                           | 262.71                       | 6.95                        |
| 45000.00         | .1595888                | 03  | .2093807               | 02-                           | 265.53                       | 7.03                        |
| 46000.00         | .1406326                | 03  | .1836108               | 02-                           | 266.83                       | 7.07                        |
| 47000.00         | .1239997                | 03  | .1613037               | 02-                           | 267.81                       | 7.03                        |
| 48000.00         | .1093884                | 03  | .1417791               | 02-                           | 268.79                       | 6.93                        |
| 49000.00         | .9652838                | 02  | .1250407               | 02-                           | 268.94                       | 6.85                        |
| 50000.00         | .8513226                | 02  | .1113984               | 02-                           | 266.23                       | 6.71                        |
| 51000.00         | .7498831                | 02  | .9913140               | 03-                           | 263.53                       | 6.43                        |
| 52000.00         | .6596933                | 02  | .8811270               | 03-                           | 260.83                       | 6.01                        |
| 53000.00         | .5798660                | 02  | .7770499               | 03-                           | 259.97                       | 5.51                        |
| 54000.00         | .5095915                | 02  | .6831900               | 03-                           | 259.86                       | 5.08                        |
| 55000.00         | .4478288                | 02  | .6006610               | 03-                           | 259.74                       | 4.75                        |
| 56000.00         | .3934794                | 02  | .5293689               | 03-                           | 258.95                       | 4.48                        |
| 57000.00         | .3454607                | 02  | .4691676               | 03-                           | 256.52                       | 4.24                        |
| 58000.00         | .3029390                | 02  | .4153521               | 03-                           | 254.09                       | 3.96                        |
| 59000.00         | .2653272                | 02  | .3672946               | 03-                           | 251.66                       | 3.66                        |
| 60000.00         | .2320294                | 02  | .3257287               | 03-                           | 248.16                       | 3.30                        |
| 61000.00         | .2025300                | 02  | .2884460               | 03-                           | 244.61                       | 2.85                        |
| 62000.00         | .1764373                | 02  | .2543877               | 03-                           | 241.06                       | 2.30                        |
| 63000.00         | .1533726                | 02  | .2255137               | 03-                           | 236.93                       | 1.73                        |
| 64000.00         | .1329915                | 02  | .1992154               | 03-                           | 232.57                       | 1.13                        |
| 65000.00         | .1150129                | 02  | .1755789               | 03-                           | 228.20                       | .48                         |
| 66000.00         | .9919214                | 01  | .1543498               | 03-                           | 223.88                       | .21-                        |
| 67000.00         | .8533576                | 01  | .1347580               | 03-                           | 220.61                       | .92-                        |
| 68000.00         | .7325360                | 01  | .1174201               | 03-                           | 217.34                       | 1.60-                       |
| 69000.00         | .6273961                | 01  | .1021043               | 03-                           | 214.07                       | 2.26-                       |
| 70000.00         | .5360920                | 01  | .8859956               | 04-                           | 210.79                       | 2.89-                       |
| 71000.00         | .4568656                | 01  | .7688233               | 04-                           | 207.03                       | 3.51-                       |
| 72000.00         | .3882592                | 01  | .6654721               | 04-                           | 203.25                       | 4.13-                       |
| 73000.00         | .3289529                | 01  | .5744876               | 04-                           | 199.48                       | 4.77-                       |
| 74000.00         | .2778412                | 01  | .4945395               | 04-                           | 195.72                       | 5.41-                       |
| 75000.00         | .2339366                | 01  | .4241193               | 04-                           | 192.16                       | 6.06-                       |
| 76000.00         | .1963470                | 01  | .3627014               | 04-                           | 188.59                       | 6.70-                       |
| 77000.00         | .1642563                | 01  | .3092697               | 04-                           | 185.03                       | 7.33-                       |
| 78000.00         | .1371610                | 01  | .2586965               | 04-                           | 184.71                       | 7.80-                       |
| 79000.00         | .1149043                | 01  | .2088594               | 04-                           | 191.66                       | 7.64-                       |
| 80000.00         | .9687336                | 00  | .1699227               | 04-                           | 198.61                       | 6.54-                       |
| 81000.00         | .8215703                | 00  | .1392366               | 04-                           | 205.56                       | 4.69-                       |
| 82000.00         | .7000789                | 00  | .1158899               | 04-                           | 210.45                       | 2.34-                       |
| 83000.00         | .5985735                | 00  | .9726148               | 05-                           | 214.40                       | .39                         |
| 84000.00         | .5132756                | 00  | .8189288               | 05-                           | 218.35                       | 3.49                        |
| 85000.00         | .4408167                | 00  | .7023205               | 05-                           | 218.66                       | 6.86                        |
| 86000.00         | .3784325                | 00  | .6073794               | 05-                           | 217.06                       | 10.28                       |
| 87000.00         | .3244484                | 00  | .5262292               | 05-                           | 214.79                       | 13.66                       |
| 88000.00         | .2773587                | 00  | .4624233               | 05-                           | 208.95                       | 16.80                       |
| 89000.00         | .2360658                | 00  | .4048883               | 05-                           | 203.12                       | 19.48                       |
| 90000.00         | .2002508                | 00  | .3479636               | 05-                           | 200.49                       | 21.82                       |
| 91000.00         | .1695888                | 00  | .2969603               | 05-                           | 198.95                       | 23.80                       |
| 92000.00         | .1433413                | .00 | .2551304               | 05-                           | 195.73                       | 25.19                       |
| 93000.00         | .1207018                | .00 | .2210559               | 05-                           | 190.22                       | 25.76                       |

# FIGURE 36

## WALLOPS ISLAND, 30 SEPT. 1966, 2350 GMT.

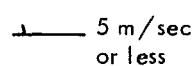
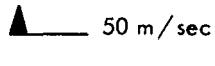
| WIND DIRECTION<br>degrees | WIND SPEED<br>m/sec | ERROR<br>m/sec ( $\pm$ ) | TEMPERATURE<br>degrees Kelvin | ERROR<br>degrees Kelvin ( $\pm$ ) | HEIGHT<br>meters |
|---------------------------|---------------------|--------------------------|-------------------------------|-----------------------------------|------------------|
| 70.98                     | 2.34                | .88                      | 231.71                        | .73                               | 30453.70         |
| 2.96                      | 3.95                | 1.06                     | 241.18                        | .52                               | 35777.90         |
| 164.60                    | 6.46                | 1.00                     | 274.22                        | .47                               | 41771.60         |
| 257.21                    | 11.57               | .78                      | 250.08                        | .51                               | 46819.45         |
| 275.61                    | 16.93               | 1.02                     | 265.27                        | .68                               | 51645.00         |
| 290.60                    | 29.84               | 1.16                     | 257.47                        | .55                               | 57101.75         |
| 290.27                    | 32.05               | 7.37                     | 248.87                        | 2.60                              | 61763.00         |
| 288.85                    | 9.76                | 2.87                     | 223.18                        | 1.13                              | 66285.49         |
| 276.17                    | 25.36               | 4.71                     | 205.29                        | 1.35                              | 70707.69         |
| 232.60                    | 33.66               | 1.39                     | 202.52                        | .51                               | 75626.94         |
| 217.11                    | 44.92               | 3.26                     | 200.07                        | 1.12                              | 80997.10         |
| 261.85                    | 55.19               | 2.28                     | 183.04                        | .70                               | 86112.80         |
| 211.06                    | 8.41                | 4.68                     | 168.50                        | 1.50                              | 90530.30         |



WIND COMPONENTS  
m/sec

| HEIGHT<br>meters | SOUTH<br>component (+) | WEST<br>component (+) |
|------------------|------------------------|-----------------------|
| 35000.00         | -3.47                  | -4.9                  |
| 40000.00         | 3.22                   | -1.26                 |
| 45000.00         | 3.88                   | 6.59                  |
| 50000.00         | -.21                   | 14.95                 |
| 55000.00         | -7.09                  | 23.66                 |
| 60000.00         | -10.87                 | 29.25                 |
| 65000.00         | -5.41                  | 15.15                 |
| 70000.00         | -2.79                  | 22.65                 |
| 75000.00         | 17.49                  | 26.54                 |
| 80000.00         | 32.96                  | 27.03                 |
| 85000.00         | 13.91                  | 48.64                 |
| 90000.00         | 7.27                   | 10.37                 |

### LEGEND

 5 m/sec  
or less     
  50 m/sec

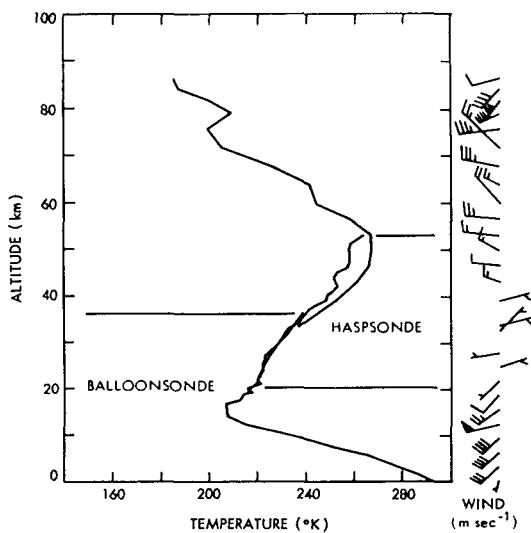
 10 m/sec     
  NORTH WIND

| HEIGHT<br>meters | PRESSURE<br>nt/sq meter |    | DENSITY<br>kg/cu meter | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>(%) | DENSITY<br>deviation<br>(%) |
|------------------|-------------------------|----|------------------------|-------------------------------|------------------------------|-----------------------------|
| 27000.00         | .1949739                | 04 | .2990218               | 01-                           | 227.15                       | 3.71                        |
| 28000.00         | .1680545                | 04 | .2562497               | 01-                           | 228.47                       | 3.98                        |
| 29000.00         | .1449823                | 04 | .2198010               | 01-                           | 229.79                       | 4.27                        |
| 30000.00         | .1251892                | 04 | .1887110               | 01-                           | 231.11                       | 4.58                        |
| 31000.00         | .1082020                | 04 | .1620044               | 01-                           | 232.68                       | 4.92                        |
| 32000.00         | .9362175                | 03 | .1391117               | 01-                           | 234.46                       | 5.30                        |
| 33000.00         | .8109812                | 03 | .1195968               | 01-                           | 236.23                       | 5.69                        |
| 34000.00         | .7032904                | 03 | .1029406               | 01-                           | 238.01                       | 6.01                        |
| 35000.00         | .6105717                | 03 | .8870695               | 02-                           | 239.79                       | 6.26                        |
| 36000.00         | .5307810                | 03 | .7628520               | 02-                           | 242.39                       | 6.47                        |
| 37000.00         | .4625667                | 03 | .6499455               | 02-                           | 247.91                       | 6.75                        |
| 38000.00         | .4042537                | 03 | .5557273               | 02-                           | 253.42                       | 7.19                        |
| 39000.00         | .3543774                | 03 | .4767909               | 02-                           | 258.93                       | 7.77                        |
| 40000.00         | .3115302                | 03 | .4104057               | 02-                           | 264.45                       | 8.49                        |
| 41000.00         | .2746035                | 03 | .3543719               | 02-                           | 269.96                       | 9.34                        |
| 42000.00         | .2425522                | 03 | .3093872               | 02-                           | 273.12                       | 10.26                       |
| 43000.00         | .2141702                | 03 | .2780529               | 02-                           | 268.34                       | 10.99                       |
| 44000.00         | .1886940                | 03 | .2434225               | 02-                           | 263.56                       | 11.32                       |
| 45000.00         | .1658698                | 03 | .2233044               | 02-                           | 258.77                       | 11.24                       |
| 46000.00         | .1454622                | 03 | .1995172               | 02-                           | 253.99                       | 10.75                       |
| 47000.00         | .1273014                | 03 | .1766416               | 02-                           | 250.64                       | 9.88                        |
| 48000.00         | .1114066                | 03 | .1529286               | 02-                           | 253.79                       | 8.90                        |
| 49000.00         | .9766078                | 02 | .1324176               | 02-                           | 256.94                       | 8.10                        |
| 50000.00         | .8575185                | 02 | .1148634               | 02-                           | 260.08                       | 7.48                        |
| 51000.00         | .7541599                | 02 | .9981088               | 03-                           | 263.23                       | 7.03                        |
| 52000.00         | .6640401                | 02 | .8737835               | 03-                           | 261.75                       | 6.71                        |
| 53000.00         | .5847255                | 02 | .7735916               | 03-                           | 263.32                       | 6.40                        |
| 54000.00         | .5145186                | 02 | .6844617               | 03-                           | 261.90                       | 6.11                        |
| 55000.00         | .4524956                | 02 | .6052195               | 03-                           | 260.47                       | 5.84                        |
| 56000.00         | .3976607                | 02 | .5348109               | 03-                           | 259.04                       | 5.60                        |
| 57000.00         | .3492353                | 02 | .4722891               | 03-                           | 257.61                       | 5.38                        |
| 58000.00         | .3064688                | 02 | .4173743               | 03-                           | 255.81                       | 5.18                        |
| 59000.00         | .2686991                | 02 | .3685950               | 03-                           | 253.96                       | 4.98                        |
| 60000.00         | .2353681                | 02 | .3252350               | 03-                           | 252.12                       | 4.79                        |
| 61000.00         | .2059799                | 02 | .2867241               | 03-                           | 250.27                       | 4.60                        |
| 62000.00         | .1800465                | 02 | .2534130               | 03-                           | 247.52                       | 4.40                        |
| 63000.00         | .1570196                | 02 | .2261928               | 03-                           | 241.84                       | 4.15                        |
| 64000.00         | .1364590                | 02 | .2013607               | 03-                           | 236.16                       | 3.79                        |
| 65000.00         | .1182617                | 02 | .1787560               | 03-                           | 230.48                       | 3.31                        |
| 66000.00         | .1020996                | 02 | .1582253               | 03-                           | 224.80                       | 2.71                        |
| 67000.00         | .8785462                | 01 | .1389384               | 03-                           | 220.29                       | 2.00                        |
| 68000.00         | .7537833                | 01 | .1214381               | 03-                           | 216.24                       | 1.24                        |
| 69000.00         | .6449610                | 01 | .1058777               | 03-                           | 212.20                       | .46                         |
| 70000.00         | .5501188                | 01 | .9207231               | 04-                           | 208.15                       | .34-                        |
| 71000.00         | .4680162                | 01 | .7948740               | 04-                           | 205.12                       | 1.15-                       |
| 72000.00         | .3976236                | 01 | .67711828              | 04-                           | 204.56                       | 1.82-                       |
| 73000.00         | .3376836                | 01 | .5766915               | 04-                           | 203.99                       | 2.24-                       |
| 74000.00         | .2866640                | 01 | .4909189               | 04-                           | 203.43                       | 2.41-                       |
| 75000.00         | .2432546                | 01 | .4177731               | 04-                           | 202.86                       | 2.32-                       |
| 76000.00         | .2063381                | 01 | .3552589               | 04-                           | 202.34                       | 1.95-                       |
| 77000.00         | .1749630                | 01 | .3019191               | 04-                           | 201.88                       | 1.29-                       |
| 78000.00         | .1483114                | 01 | .2565072               | 04-                           | 201.43                       | .30-                        |
| 79000.00         | .1256789                | 01 | .2178566               | 04-                           | 200.97                       | 1.01                        |
| 80000.00         | .1064656                | 01 | .1849708               | 04-                           | 200.52                       | 2.70                        |
| 81000.00         | .9015992                | 00 | .1570048               | 04-                           | 200.05                       | 4.58                        |
| 82000.00         | .7623409                | 00 | .1350002               | 04-                           | 196.73                       | 6.33                        |
| 83000.00         | .6427832                | 00 | .1157869               | 04-                           | 193.40                       | 7.80                        |
| 84000.00         | .5404022                | 00 | .9904918               | 05-                           | 190.07                       | 8.96                        |
| 85000.00         | .4529626                | 00 | .8450217               | 05-                           | 186.74                       | 9.80                        |
| 86000.00         | .3784890                | 00 | .7189002               | 05-                           | 183.41                       | 10.30                       |
| 87000.00         | .3152441                | 00 | .6097340               | 05-                           | 180.12                       | 10.44                       |
| 88000.00         | .2616976                | 00 | .5155930               | 05-                           | 176.82                       | 10.20                       |
| 89000.00         | .2165000                | 00 | .4346401               | 05-                           | 173.53                       | 9.58                        |
| 90000.00         | .1784696                | 00 | .3652222               | 05-                           | 170.24                       | 8.57                        |

# FIGURE 37

## WALLOPS ISLAND, 1 OCT. 1966, 0530 GMT.

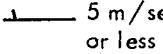
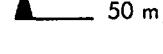
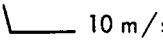
| WIND DIRECTION<br>degrees | WIND SPEED<br>m/sec | ERROR<br>m/sec ( $\pm$ ) | TEMPERATURE<br>degrees Kelvin | ERROR<br>degrees Kelvin ( $\pm$ ) | HEIGHT<br>meters |
|---------------------------|---------------------|--------------------------|-------------------------------|-----------------------------------|------------------|
| 70.33                     | 2.72                | .79                      | 236.75                        | .30                               | 33402.80         |
| 70.73                     | 2.63                | .94                      | 251.97                        | .45                               | 38929.54         |
| 297.49                    | 14.07               | 1.03                     | 260.65                        | .66                               | 43076.85         |
| 279.71                    | 11.52               | 1.21                     | 265.68                        | .72                               | 46516.55         |
| 307.93                    | 16.15               | 1.30                     | 267.41                        | .74                               | 49861.45         |
| 279.30                    | 14.96               | 1.01                     | 267.42                        | .62                               | 53120.05         |
| 277.56                    | 25.18               | .93                      | 258.02                        | .51                               | 56291.95         |
| 320.31                    | 22.00               | 1.23                     | 244.16                        | .43                               | 59867.30         |
| 294.77                    | 16.73               | .93                      | 241.10                        | .42                               | 63809.50         |
| 286.70                    | 35.20               | .84                      | 227.44                        | .33                               | 67604.74         |
| 312.69                    | 22.80               | 1.60                     | 205.87                        | .43                               | 71695.14         |
| 265.29                    | 33.31               | 1.95                     | 198.83                        | .79                               | 75603.85         |
| 247.39                    | 38.21               | 1.89                     | 209.15                        | .75                               | 78888.15         |
| 203.84                    | 61.95               | 2.70                     | 200.14                        | .75                               | 81651.80         |
| 212.84                    | 40.33               | 3.13                     | 187.20                        | .81                               | 83917.80         |
| 258.00                    | 10.51               | 4.05                     | 185.10                        | 1.18                              | 86099.30         |



WIND COMPONENTS  
m/sec

| HEIGHT<br>meters | SOUTH<br>component (+) | WEST<br>component (+) |
|------------------|------------------------|-----------------------|
| 35000.00         | -.90                   | -2.53                 |
| 40000.00         | -2.32                  | 1.38                  |
| 45000.00         | -3.94                  | 11.85                 |
| 50000.00         | -9.60                  | 12.82                 |
| 55000.00         | -2.94                  | 20.81                 |
| 60000.00         | -16.59                 | 14.08                 |
| 65000.00         | -7.98                  | 21.00                 |
| 70000.00         | -13.24                 | 23.79                 |
| 75000.00         | -.07                   | 30.66                 |
| 80000.00         | 31.57                  | 31.16                 |
| 85000.00         | 18.15                  | 16.12                 |

### LEGEND

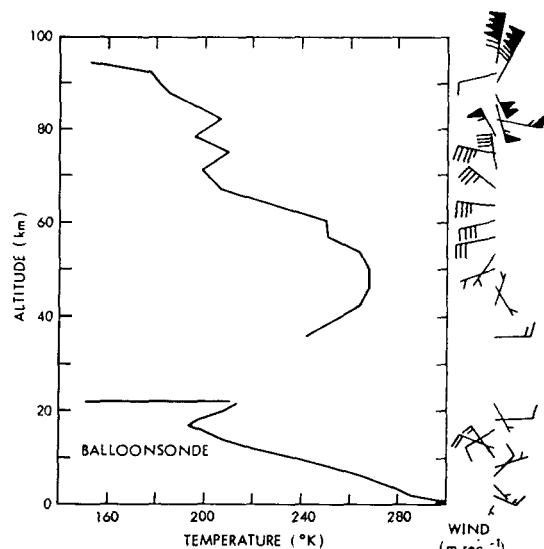
 5 m/sec  
or less       50 m/sec  
 10 m/sec      DIRECTION OF  
NORTH WIND ↓

| HEIGHT<br>meters | PRESSURE<br>nt/sq meter | DENSITY<br>kg/cu meter | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>(%) | DENSITY<br>deviation<br>(%) |       |       |
|------------------|-------------------------|------------------------|-------------------------------|------------------------------|-----------------------------|-------|-------|
| 29000.00         | .1432517                | .04                    | .2180660                      | 01-                          | 228.86                      | 3.02  | 1.53  |
| 30000.00         | .1236394                | .04                    | .1867497                      | 01-                          | 230.65                      | 3.28  | 1.43  |
| 31000.00         | .1068387                | .04                    | .1601299                      | 01-                          | 232.44                      | 3.60  | 1.39  |
| 32000.00         | .9242868                | .03                    | .1374730                      | 01-                          | 234.23                      | 3.96  | 1.41  |
| 33000.00         | .8005413                | .03                    | .1181643                      | 01-                          | 236.02                      | 4.33  | 2.10  |
| 34000.00         | .6942671                | .03                    | .1014605                      | 01-                          | 238.39                      | 4.65  | 2.61  |
| 35000.00         | .6030438                | .03                    | .8712242                      | 02-                          | 241.14                      | 4.95  | 2.94  |
| 36000.00         | .5246683                | .03                    | .7494339                      | 02-                          | 243.89                      | 5.24  | 3.25  |
| 37000.00         | .4572130                | .03                    | .6457879                      | 02-                          | 246.65                      | 5.53  | 2.56  |
| 38000.00         | .3990565                | .03                    | .5574204                      | 02-                          | 249.40                      | 5.81  | 3.86  |
| 39000.00         | .3488286                | .03                    | .4820262                      | 02-                          | 252.11                      | 6.08  | 4.18  |
| 40000.00         | .3053247                | .03                    | .4184355                      | 02-                          | 254.21                      | 6.33  | 4.72  |
| 41000.00         | .2675497                | .03                    | .3636706                      | 02-                          | 256.30                      | 6.53  | 5.21  |
| 42000.00         | .2347098                | .03                    | .3164475                      | 02-                          | 258.39                      | 6.70  | 5.66  |
| 43000.00         | .2061269                | .03                    | .2756766                      | 02-                          | 260.49                      | 6.82  | 6.07  |
| 44000.00         | .1811942                | .03                    | .2409357                      | 02-                          | 262.00                      | 6.90  | 6.66  |
| 45000.00         | .1593999                | .03                    | .2107808                      | 02-                          | 263.46                      | 6.90  | 7.19  |
| 46000.00         | .1403319                | .03                    | .1845436                      | 02-                          | 264.92                      | 6.84  | 7.66  |
| 47000.00         | .1236231                | .03                    | .1619558                      | 02-                          | 265.92                      | 6.70  | 8.22  |
| 48000.00         | .1089476                | .03                    | .1424515                      | 02-                          | 266.44                      | 6.50  | 8.18  |
| 49000.00         | .9604158                | .02                    | .1253322                      | 02-                          | 266.96                      | 6.31  | 7.78  |
| 50000.00         | .8468729                | .02                    | .1103299                      | 02-                          | 267.41                      | 6.15  | 7.44  |
| 51000.00         | .7472263                | .02                    | .9734730                      | 03-                          | 267.41                      | 6.05  | 7.34  |
| 52000.00         | .6592738                | .02                    | .8588830                      | 03-                          | 267.41                      | 5.94  | 7.23  |
| 53000.00         | .5817462                | .02                    | .7578762                      | 03-                          | 267.41                      | 5.86  | 6.69  |
| 54000.00         | .5127886                | .02                    | .6746175                      | 03-                          | 264.81                      | 5.74  | 6.85  |
| 55000.00         | .4514200                | .02                    | .6006017                      | 03-                          | 261.85                      | 5.59  | 7.10  |
| 56000.00         | .3968356                | .02                    | .5340213                      | 03-                          | 258.88                      | 5.38  | 7.31  |
| 57000.00         | .3482911                | .02                    | .4753220                      | 03-                          | 255.27                      | 5.09  | 7.73  |
| 58000.00         | .3051088                | .02                    | .4228096                      | 03-                          | 251.40                      | 4.71  | 8.17  |
| 59000.00         | .2667422                | .02                    | .3754308                      | 03-                          | 247.52                      | 4.22  | 8.52  |
| 60000.00         | .2327427                | .02                    | .3322278                      | 03-                          | 244.06                      | 3.62  | 8.59  |
| 61000.00         | .2028448                | .02                    | .2904743                      | 03-                          | 243.28                      | 3.01  | 7.47  |
| 62000.00         | .1767174                | .02                    | .2538700                      | 03-                          | 242.50                      | 2.47  | 6.08  |
| 63000.00         | .1538939                | .02                    | .2217922                      | 03-                          | 241.73                      | 2.08  | 4.36  |
| 64000.00         | .1339437                | .02                    | .1940952                      | 03-                          | 240.41                      | 1.85  | 3.03  |
| 65000.00         | .1164181                | .02                    | .1712631                      | 03-                          | 236.81                      | 1.70  | 2.76  |
| 66000.00         | .1009729                | .02                    | .1508341                      | 03-                          | 233.21                      | 1.57  | 2.51  |
| 67000.00         | .8738711                | .01                    | .1325857                      | 03-                          | 229.62                      | 1.45  | 2.27  |
| 68000.00         | .7544403                | .01                    | .1166300                      | 03-                          | 225.35                      | 1.33  | 2.31  |
| 69000.00         | .6493144                | .01                    | .1027845                      | 03-                          | 220.08                      | 1.15  | 2.78  |
| 70000.00         | .5568327                | .01                    | .9030960                      | 04-                          | 214.80                      | .86   | 3.17  |
| 71000.00         | .4757253                | .01                    | .7909774                      | 04-                          | 209.53                      | .46   | 2.47  |
| 72000.00         | .4049920                | .01                    | .6871965                      | 04-                          | 205.31                      | .00-  | 2.19  |
| 73000.00         | .3439792                | .01                    | .5888294                      | 04-                          | 203.51                      | .42-  | 1.75  |
| 74000.00         | .2917496                | .01                    | .5038767                      | 04-                          | 201.71                      | .68-  | .47   |
| 75000.00         | .2470985                | .01                    | .4306012                      | 04-                          | 199.91                      | .78-  | .66-  |
| 76000.00         | .2091499                | .01                    | .3641832                      | 04-                          | 200.97                      | .61-  | 2.52- |
| 77000.00         | .1772791                | .01                    | .3039164                      | 04-                          | 203.21                      | .01   | 5.22- |
| 78000.00         | .1506541                | .01                    | .2543405                      | 04-                          | 206.35                      | 1.26  | 7.51- |
| 79000.00         | .1283140                | .01                    | .2141086                      | 04-                          | 208.78                      | 3.13  | 8.85- |
| 80000.00         | .1092566                | .01                    | .1851995                      | 04-                          | 205.52                      | 5.39  | 7.35- |
| 81000.00         | .9279563                | .00                    | .1598308                      | 04-                          | 202.26                      | 7.64  | 3.83- |
| 82000.00         | .7858197                | .00                    | .1381586                      | 04-                          | 198.15                      | 9.61  | .02-  |
| 83000.00         | .6627083                | .00                    | .1199721                      | 04-                          | 192.44                      | 11.14 | 4.32  |
| 84000.00         | .5561538                | .00                    | .1035454                      | 04-                          | 187.12                      | 12.14 | 8.27  |
| 85000.00         | .4653871                | .00                    | .8709442                      | 05-                          | 186.15                      | 12.82 | 9.48  |
| 86000.00         | .3890959                | .00                    | .7319548                      | 05-                          | 185.19                      | 13.39 | 10.61 |

# FIGURE 38

## NATAL, 1 OCTOBER 1966, 0823 GMT.

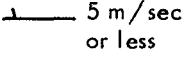
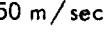
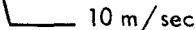
| WIND DIRECTION<br>degrees | WIND SPEED<br>m/sec | ERROR<br>m/sec ( $\pm$ ) | TEMPERATURE<br>degrees Kelvin | ERROR<br>degrees Kelvin ( $\pm$ ) | HEIGHT<br>meters |
|---------------------------|---------------------|--------------------------|-------------------------------|-----------------------------------|------------------|
| 86.21                     | 13.01               | 1.37                     | 242.38                        | .20                               | 35896.80         |
| 10.28                     | 6.55                | 2.62                     | 264.39                        | .45                               | 42269.85         |
| 150.45                    | 5.97                | 3.79                     | 268.18                        | .55                               | 46558.60         |
| 251.99                    | 3.41                | 2.98                     | 267.75                        | .77                               | 50125.60         |
| 213.52                    | 6.96                | 3.37                     | 264.27                        | .62                               | 53608.65         |
| 258.05                    | 31.14               | 10.59                    | 251.06                        | 1.44                              | 56992.90         |
| 254.68                    | 41.29               | 15.23                    | 249.67                        | 2.21                              | 60274.45         |
| 279.68                    | 32.53               | 16.12                    | 229.17                        | 2.37                              | 63469.45         |
| 310.42                    | 33.04               | 7.70                     | 206.58                        | 1.28                              | 67085.85         |
| 356.15                    | 39.30               | 4.85                     | 199.34                        | .86                               | 71089.65         |
| 281.04                    | 42.61               | 14.05                    | 209.82                        | 2.07                              | 74938.60         |
| 331.93                    | 53.02               | 14.15                    | 195.95                        | 3.03                              | 78650.10         |
| 102.21                    | 54.64               | 17.68                    | 205.84                        | 2.92                              | 82218.30         |
| 172.67                    | 56.47               | 19.46                    | 195.24                        | 3.24                              | 85201.55         |
| 168.30                    | 98.73               | 28.15                    | 185.83                        | 4.48                              | 87655.94         |
| 24.33                     | 179.58              | 28.55                    | 181.25                        | 4.43                              | 90038.94         |
| 258.27                    | 9.60                | 30.88                    | 177.94                        | 4.67                              | 92323.05         |
| 5.26                      | 218.79              | 26.11                    | 153.41                        | 3.93                              | 94458.44         |



WIND COMPONENTS  
m/sec

| HEIGHT<br>meters | SOUTH<br>component (+) | WEST<br>component (+) |
|------------------|------------------------|-----------------------|
| 40000.00         | -4.45                  | -5.37                 |
| 45000.00         | .96                    | -2.29                 |
| 50000.00         | 1.20                   | 3.02                  |
| 55000.00         | 6.06                   | 14.78                 |
| 60000.00         | 10.53                  | 39.04                 |
| 65000.00         | -12.22                 | 29.14                 |
| 70000.00         | -34.37                 | 8.76                  |
| 75000.00         | -8.79                  | 41.54                 |
| 80000.00         | -24.71                 | -4.68                 |
| 85000.00         | 53.00                  | -10.32                |
| 90000.00         | -159.37                | -73.09                |

### LEGEND

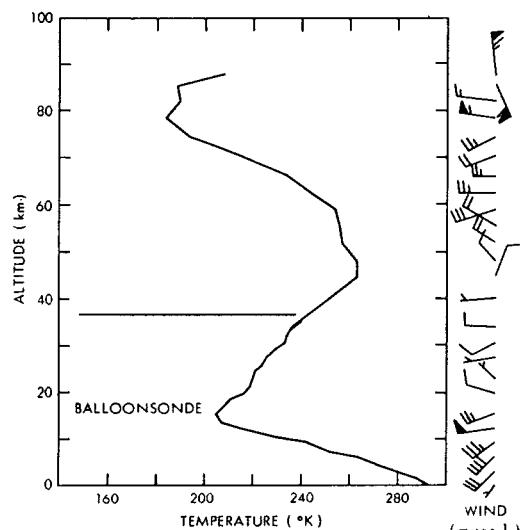
 5 m/sec or less  
 50 m/sec  
 10 m/sec  
 NORTH WIND  
 DIRECTION OF

| HEIGHT<br>meters | PRESSURE<br>nt, sq meter |     | DENSITY<br>kg/cu meter | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>(%) | DENSITY<br>deviation<br>(%) |
|------------------|--------------------------|-----|------------------------|-------------------------------|------------------------------|-----------------------------|
| 30000.00         | .1195494                 | 04  | .1809027               | 01-                           | 230.22                       | .12-                        |
| 31000.00         | .1033156                 | 04  | .1549512               | 01-                           | 232.28                       | .18                         |
| 32000.00         | .8940535                 | 03  | .1325102               | 01-                           | 234.34                       | .56                         |
| 33000.00         | .7746941                 | 03  | .1141627               | 01-                           | 236.40                       | .96                         |
| 34000.00         | .6721344                 | 03  | .9819340               | 02-                           | 238.46                       | 1.31                        |
| 35000.00         | .5838908                 | 03  | .8457119               | 02-                           | 240.52                       | 1.61                        |
| 36000.00         | .5078847                 | 03  | .7289453               | 02-                           | 242.73                       | 1.87                        |
| 37000.00         | .4425043                 | 03  | .6261973               | 02-                           | 246.18                       | 2.13                        |
| 38000.00         | .3862978                 | 03  | .5390949               | 02-                           | 249.64                       | 2.42                        |
| 39000.00         | .3376747                 | 03  | .4650837               | 02-                           | 253.09                       | 2.75                        |
| 40000.00         | .2960707                 | 03  | .4020539               | 02-                           | 256.54                       | 3.10                        |
| 41000.00         | .2599081                 | 03  | .3482578               | 02-                           | 260.00                       | 3.49                        |
| 42000.00         | .2265643                 | 03  | .3022142               | 02-                           | 263.45                       | 3.90                        |
| 43000.00         | .2012547                 | 03  | .2645470               | 02-                           | 265.03                       | 4.30                        |
| 44000.00         | .1773200                 | 03  | .2323101               | 02-                           | 265.91                       | 4.61                        |
| 45000.00         | .1563035                 | 03  | .2040973               | 02-                           | 266.80                       | 4.83                        |
| 46000.00         | .1376406                 | 03  | .1793947               | 02-                           | 267.68                       | 4.94                        |
| 47000.00         | .1216017                 | 03  | .1579996               | 02-                           | 268.12                       | 4.96                        |
| 48000.00         | .1072872                 | 03  | .1394626               | 02-                           | 268.00                       | 4.88                        |
| 49000.00         | .9465551                 | 02  | .1230980               | 02-                           | 267.88                       | 4.76                        |
| 50000.00         | .8351022                 | 02  | .1086517               | 02-                           | 267.77                       | 4.67                        |
| 51000.00         | .7366305                 | 02  | .9615236               | 03-                           | 266.88                       | 4.54                        |
| 52000.00         | .6495958                 | 02  | .8510505               | 03-                           | 265.88                       | 4.37                        |
| 53000.00         | .5724372                 | 02  | .7528988               | 03-                           | 264.88                       | 4.16                        |
| 54000.00         | .5041544                 | 02  | .6684811               | 03-                           | 262.74                       | 3.96                        |
| 55000.00         | .4433012                 | 02  | .5967648               | 03-                           | 258.84                       | 3.71                        |
| 56000.00         | .3891894                 | 02  | .5318461               | 03-                           | 254.93                       | 3.35                        |
| 57000.00         | .3409508                 | 02  | .4731241               | 03-                           | 251.05                       | 2.88                        |
| 58000.00         | .2983648                 | 02  | .4147301               | 03-                           | 250.63                       | 2.40                        |
| 59000.00         | .2610498                 | 02  | .3634772               | 03-                           | 250.21                       | 1.99                        |
| 60000.00         | .2283596                 | 02  | .3185006               | 03-                           | 249.78                       | 1.67                        |
| 61000.00         | .1994903                 | 02  | .2836541               | 03-                           | 245.01                       | 1.30                        |
| 62000.00         | .1737336                 | 02  | .2536731               | 03-                           | 238.59                       | .74                         |
| 63000.00         | .1507399                 | 02  | .2261812               | 03-                           | 232.18                       | .00-                        |
| 64000.00         | .1302799                 | 02  | .2009561               | 03-                           | 225.85                       | .93-                        |
| 65000.00         | .1121395                 | 02  | .1778940               | 03-                           | 219.61                       | 2.03-                       |
| 66000.00         | .9611298                 | 01  | .1565331               | 03-                           | 213.36                       | 3.31-                       |
| 67000.00         | .8200433                 | 01  | .1379341               | 03-                           | 207.12                       | 4.79-                       |
| 68000.00         | .6974389                 | 01  | .1185660               | 03-                           | 204.93                       | 6.31-                       |
| 69000.00         | .5922540                 | 01  | .1015818               | 03-                           | 203.11                       | 7.73-                       |
| 70000.00         | .5022226                 | 01  | .8691459               | 04-                           | 201.30                       | 9.02-                       |
| 71000.00         | .4252654                 | 01  | .7426431               | 04-                           | 199.49                       | 10.18-                      |
| 72000.00         | .3601947                 | 01  | .6217899               | 04-                           | 201.81                       | 11.06-                      |
| 73000.00         | .3057248                 | 01  | .5207350               | 04-                           | 204.53                       | 11.40-                      |
| 74000.00         | .2600684                 | 01  | .4371497               | 04-                           | 207.26                       | 11.46-                      |
| 75000.00         | .2216752                 | 01  | .3684787               | 04-                           | 209.58                       | 10.98-                      |
| 76000.00         | .1888564                 | 01  | .3196217               | 04-                           | 205.85                       | 10.26-                      |
| 77000.00         | .1604331                 | 01  | .2765355               | 04-                           | 202.11                       | 9.48-                       |
| 78000.00         | .1358805                 | 01  | .2386244               | 04-                           | 198.38                       | 8.66-                       |
| 79000.00         | .1148411                 | 01  | .2031697               | 04-                           | 196.92                       | 7.69-                       |
| 80000.00         | .9711830                 | 00  | .1604306               | 04-                           | 199.69                       | 6.31-                       |
| 81000.00         | .8232482                 | 00  | .1416551               | 04-                           | 202.46                       | 4.50-                       |
| 82000.00         | .6994528                 | 00  | .1187269               | 04-                           | 205.27                       | 2.43-                       |
| 83000.00         | .5944451                 | 00  | .1019844               | 04-                           | 203.06                       | .30-                        |
| 84000.00         | .5040586                 | 00  | .8801828               | 05-                           | 199.51                       | 1.64                        |
| 85000.00         | .4261721                 | 00  | .7576778               | 05-                           | 195.95                       | 3.71                        |
| 86000.00         | .3591983                 | 00  | .6511642               | 05-                           | 192.17                       | 4.68                        |
| 87000.00         | .3017318                 | 00  | .5581261               | 05-                           | 188.34                       | 5.70                        |
| 88000.00         | .2526453                 | 00  | .4753439               | 05-                           | 185.16                       | 6.39                        |
| 89000.00         | .2110379                 | 00  | .4012176               | 05-                           | 183.24                       | 6.82                        |
| 90000.00         | .1759590                 | 00  | .3380663               | 05-                           | 181.33                       | 7.04                        |
| 91000.00         | .1464695                 | 00  | .2837080               | 05-                           | 179.86                       | 6.92                        |
| 92000.00         | .1217469                 | 00  | .2377394               | 05-                           | 178.40                       | 6.33                        |
| 93000.00         | .1006807                 | 00  | .2061273               | 05-                           | 170.16                       | 4.90                        |
| 94000.00         | .8231750                 | 01- | .1807298               | 05-                           | 158.67                       | 2.02                        |

# FIGURE 39

## WALLOPS ISLAND, 1 OCT. 1966, 1128 GMT.

| WIND DIRECTION<br>degrees | WIND SPEED<br>m/sec | ERROR<br>m/sec ( $\pm$ ) | TEMPERATURE<br>degrees Kelvin | ERROR<br>degrees Kelvin ( $\pm$ ) | HEIGHT<br>meters |
|---------------------------|---------------------|--------------------------|-------------------------------|-----------------------------------|------------------|
| 276.49                    | 11.18               | .74                      | 236.69                        | .45                               | 34285.95         |
| 265.60                    | 2.48                | 1.44                     | 251.67                        | .70                               | 40257.60         |
| 11.73                     | 11.75               | 2.84                     | 262.57                        | 1.00                              | 44743.85         |
| 324.25                    | 7.70                | 2.12                     | 262.68                        | 1.04                              | 48462.25         |
| 300.80                    | 18.55               | 1.95                     | 256.77                        | 1.16                              | 52076.00         |
| 297.39                    | 20.05               | 2.59                     | 255.95                        | 1.52                              | 55595.80         |
| 253.19                    | 28.87               | 2.25                     | 253.92                        | 1.42                              | 59027.20         |
| 269.62                    | 22.84               | 1.45                     | 243.89                        | .79                               | 62369.40         |
| 268.46                    | 25.09               | .96                      | 234.36                        | .46                               | 66144.60         |
| 251.62                    | 21.73               | 1.09                     | 214.65                        | .48                               | 70328.60         |
| 244.98                    | 22.54               | 2.11                     | 193.73                        | .72                               | 74354.20         |
| 279.99                    | 55.14               | 3.98                     | 184.51                        | 1.08                              | 78254.60         |
| 276.12                    | 13.09               | 3.62                     | 189.79                        | 1.06                              | 82004.19         |
| 164.25                    | 61.58               | 6.79                     | 189.40                        | 1.68                              | 85135.85         |
| 350.44                    | 66.71               | 7.92                     | 207.88                        | 2.08                              | 87728.15         |



### WIND COMPONENTS m/sec

| HEIGHT<br>meters | SOUTH<br>component (+) | WEST<br>component (+) |
|------------------|------------------------|-----------------------|
| 35000.00         | -1.09                  | 10.07                 |
| 40000.00         | .12                    | 2.84                  |
| 45000.00         | -11.14                 | -1.91                 |
| 50000.00         | -7.63                  | 9.36                  |
| 55000.00         | -9.27                  | 17.48                 |
| 60000.00         | 5.96                   | 26.24                 |
| 65000.00         | .51                    | 24.40                 |
| 70000.00         | 6.36                   | 20.97                 |
| 75000.00         | 6.37                   | 26.03                 |
| 80000.00         | -5.76                  | 35.08                 |
| 85000.00         | 56.63                  | -15.42                |

### LEGEND

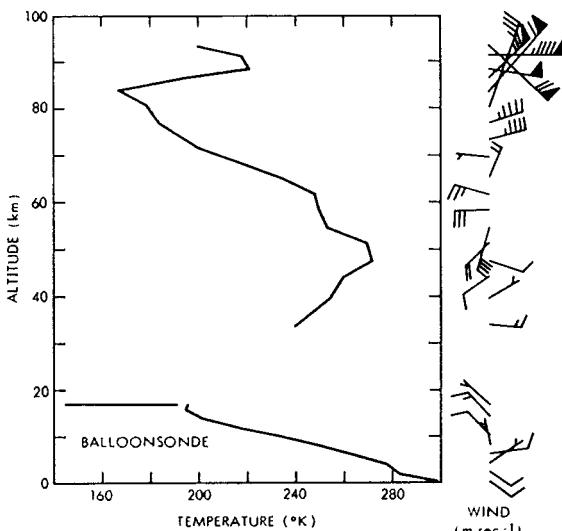
— 5 m/sec or less      ▲ 50 m/sec  
 \ 10 m/sec      DIRECTION OF NORTH WIND

| HEIGHT<br>meters | PRESSURE<br>nt/sq meter |    | DENSITY<br>kg/cu meter | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>(%) | DENSITY<br>deviation<br>(%) |
|------------------|-------------------------|----|------------------------|-------------------------------|------------------------------|-----------------------------|
| 2000.00          | .1432517                | 04 | .2180660               | 218.86                        | 3.02                         | 1.53                        |
| 3000.00          | .1236271                | 04 | .1869820               | 230.34                        | 3.27                         | 1.56                        |
| 31000.00         | .1067568                | 04 | .1604945               | 231.82                        | 3.55                         | 1.63                        |
| 32000.00         | .9234797                | 03 | .1378934               | 233.30                        | 3.87                         | 1.73                        |
| 33000.00         | .7993105                | 03 | .1186046               | 234.78                        | 4.17                         | 2.48                        |
| 34000.00         | .6924964                | 03 | .1021109               | 236.26                        | 4.38                         | 3.27                        |
| 35000.00         | .6006529                | 03 | .8774573               | 238.48                        | 4.53                         | 3.67                        |
| 36000.00         | .5217436                | 03 | .7542503               | 240.99                        | 4.65                         | 3.92                        |
| 37000.00         | .4536820                | 03 | .6423682               | 243.49                        | 4.76                         | 4.14                        |
| 38000.00         | .3954283                | 03 | .5509873               | 246.00                        | 4.85                         | 4.34                        |
| 39000.00         | .3444994                | 03 | .4836409               | 248.51                        | 4.92                         | 4.53                        |
| 40000.00         | .3014271                | 03 | .4183362               | 251.02                        | 4.97                         | 4.69                        |
| 41000.00         | .2637186                | 03 | .3624646               | 253.47                        | 5.01                         | 4.86                        |
| 42000.00         | .2310324                | 03 | .3145244               | 255.90                        | 5.03                         | 5.02                        |
| 43000.00         | .2026591                | 03 | .2733023               | 258.33                        | 5.03                         | 5.16                        |
| 44000.00         | .1779957                | 03 | .2378050               | 260.76                        | 5.01                         | 5.27                        |
| 45000.00         | .1565048                | 03 | .2076178               | 262.57                        | 4.96                         | 5.60                        |
| 46000.00         | .1376809                | 03 | .1826531               | 262.60                        | 4.82                         | 6.55                        |
| 47000.00         | .12111263               | 03 | .1606740               | 262.63                        | 4.55                         | 7.36                        |
| 48000.00         | .1065661                | 03 | .1413148               | 262.66                        | 4.17                         | 7.34                        |
| 49000.00         | .9374008                | 02 | .1247440               | 261.79                        | 3.76                         | 7.27                        |
| 50000.00         | .8241046                | 02 | .1103557               | 260.16                        | 3.29                         | 7.46                        |
| 51000.00         | .7239432                | 02 | .9755563               | 258.53                        | 2.74                         | 7.57                        |
| 52000.00         | .6354592                | 02 | .8617640               | 256.89                        | 2.11                         | 7.59                        |
| 53000.00         | .5575320                | 02 | .7570872               | 256.55                        | 1.45                         | 6.58                        |
| 54000.00         | .4891100                | 02 | .6647811               | 256.32                        | .86                          | 5.29                        |
| 55000.00         | .4290510                | 02 | .5836835               | 256.08                        | .35                          | 4.08                        |
| 56000.00         | .3763226                | 02 | .5127094               | 255.70                        | .06-                         | 3.03                        |
| 57000.00         | .3300063                | 02 | .4506502               | 255.11                        | .42-                         | 2.13                        |
| 58000.00         | .2893143                | 02 | .3960007               | 254.52                        | .70-                         | 1.31                        |
| 59000.00         | .2535723                | 02 | .3478877               | 253.93                        | .92-                         | .56                         |
| 60000.00         | .2220504                | 02 | .3082028               | 250.97                        | 1.13-                        | .74                         |
| 61000.00         | .1941485                | 02 | .2727349               | 248.00                        | 1.40-                        | .90                         |
| 62000.00         | .1694825                | 02 | .2409999               | 245.00                        | 1.72-                        | .70                         |
| 63000.00         | .1477217                | 02 | .2123970               | 242.30                        | 2.01-                        | .05-                        |
| 64000.00         | .1285688                | 02 | .1868044               | 239.77                        | 2.23-                        | .83-                        |
| 65000.00         | .1117398                | 02 | .1640797               | 237.25                        | 2.37-                        | 1.54-                       |
| 66000.00         | .9697229                | 01 | .1439260               | 234.72                        | 2.44-                        | 2.17-                       |
| 67000.00         | .8398266                | 01 | .1270260               | 230.33                        | 2.49-                        | 2.01-                       |
| 68000.00         | .7252758                | 01 | .1119914               | 225.62                        | 2.58-                        | 1.75-                       |
| 69000.00         | .6244425                | 01 | .9847662               | 220.90                        | 2.72-                        | 1.52-                       |
| 70000.00         | .5359203                | 01 | .8636056               | 216.19                        | 2.92-                        | 1.34-                       |
| 71000.00         | .4583673                | 01 | .7562546               | 211.15                        | 3.19-                        | 1.06-                       |
| 72000.00         | .3905556                | 01 | .6606299               | 205.96                        | 3.57-                        | .79-                        |
| 73000.00         | .3314341                | 01 | .5751356               | 200.76                        | 4.05-                        | .60-                        |
| 74000.00         | .2800689                | 01 | .4989149               | 195.56                        | 4.66-                        | .51-                        |
| 75000.00         | .2357996                | 01 | .4274127               | 192.20                        | 5.31-                        | 1.40-                       |
| 76000.00         | .1980271                | 01 | .3634160               | 189.83                        | 5.90-                        | 2.72-                       |
| 77000.00         | .1659510                | 01 | .3083910               | 187.47                        | 6.37-                        | 3.92-                       |
| 78000.00         | .1387667                | 01 | .2611671               | 185.10                        | 6.72-                        | 5.03-                       |
| 79000.00         | .1159352                | 01 | .2176707               | 185.55                        | 6.82-                        | 7.33-                       |
| 80000.00         | .9695212                | 00 | .1806588               | 186.96                        | 6.47-                        | 9.62-                       |
| 81000.00         | .8119058                | 00 | .1501583               | 188.37                        | 5.81-                        | 9.65-                       |
| 82000.00         | .6808497                | 00 | .1249859               | 189.77                        | 5.03-                        | 9.56-                       |
| 83000.00         | .5713185                | 00 | .1049439               | 189.66                        | 4.18-                        | 8.74-                       |
| 84000.00         | .4793811                | 00 | .8811371               | 189.53                        | 3.33-                        | 7.86-                       |
| 85000.00         | .4022129                | 00 | .7397800               | 189.41                        | 2.49-                        | 7.00-                       |
| 86000.00         | .3384098                | 00 | .6026765               | 195.55                        | 1.37-                        | 8.89-                       |
| 87000.00         | .2863850                | 00 | .4922520               | 202.68                        | .33                          | 10.56-                      |

# FIGURE 40

## NATAL, 1 OCTOBER 1966, 2039 GMT.

| WIND DIRECTION<br>degrees | WIND SPEED<br>m/sec | ERROR<br>m/sec ( $\pm$ ) | TEMPERATURE<br>degrees Kelvin | ERROR<br>degrees Kelvin ( $\pm$ ) | HEIGHT<br>meters |
|---------------------------|---------------------|--------------------------|-------------------------------|-----------------------------------|------------------|
| 97.94                     | 12.77               | 1.43                     | 239.91                        | .27                               | 33820.20         |
| 59.87                     | 5.06                | 2.55                     | 254.37                        | .52                               | 39656.60         |
| 238.07                    | 7.94                | 5.49                     | 260.31                        | 1.59                              | 44028.29         |
| 116.11                    | 7.75                | 11.25                    | 271.80                        | 2.11                              | 47661.69         |
| 229.94                    | 17.63               | 6.57                     | 269.43                        | 1.62                              | 51225.15         |
| 195.15                    | 38.63               | 5.05                     | 252.93                        | 1.31                              | 54690.95         |
| 267.17                    | 31.35               | 7.14                     | 250.64                        | 1.37                              | 58065.65         |
| 291.51                    | 26.76               | 9.87                     | 248.31                        | 2.20                              | 61364.95         |
| 10.12                     | 20.16               | 7.72                     | 233.79                        | 1.83                              | 65087.94         |
| 276.10                    | 5.29                | 3.46                     | 213.41                        | 1.61                              | 69189.24         |
| 73.68                     | 42.91               | 8.90                     | 200.21                        | 1.63                              | 73142.95         |
| 68.91                     | 45.61               | 10.34                    | 183.74                        | 1.73                              | 76959.20         |
| 11.09                     | 36.10               | 14.95                    | 178.82                        | 2.64                              | 80613.65         |
| 33.95                     | 60.38               | 18.55                    | 166.88                        | 2.95                              | 83685.90         |
| 46.34                     | 77.45               | 8.29                     | 193.77                        | 1.45                              | 86217.24         |
| 100.04                    | 48.42               | 22.75                    | 220.86                        | 4.04                              | 88663.30         |
| 89.31                     | 96.48               | 35.87                    | 218.21                        | 6.44                              | 91026.80         |
| 135.15                    | 68.25               | 94.64                    | 200.22                        | 13.38                             | 93249.44         |



WIND COMPONENTS  
m/sec

| HEIGHT<br>meters | SOUTH<br>component (+) | WEST<br>component (+) |
|------------------|------------------------|-----------------------|
| 35000.00         | .89                    | -10.97                |
| 40000.00         | -2.01                  | -3.50                 |
| 45000.00         | 3.98                   | 3.07                  |
| 50000.00         | 8.61                   | 6.46                  |
| 55000.00         | 31.30                  | 7.87                  |
| 60000.00         | -17.33                 | 8.76                  |
| 65000.00         | -19.61                 | -2.87                 |
| 70000.00         | -2.92                  | -4.26                 |
| 75000.00         | -14.17                 | -41.85                |
| 80000.00         | -32.23                 | -12.92                |
| 85000.00         | -51.84                 | -45.30                |
| 90000.00         | 3.01                   | -75.27                |

### LEGEND

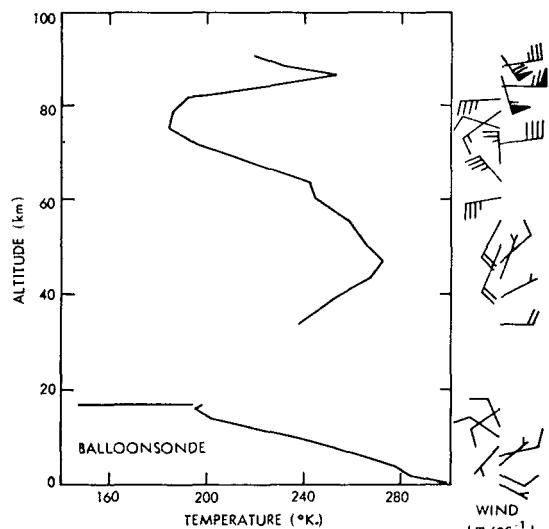
— 5 m/sec or less      ▲ 50 m/sec  
 [ ] 10 m/sec      DIRECTION OF NORTH WIND ↓

| HEIGHT<br>meters | PRESSURE<br>nt/sq meter |    | DENSITY<br>kg/cu meter | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>(%) | DENSITY<br>deviation<br>(%) |
|------------------|-------------------------|----|------------------------|-------------------------------|------------------------------|-----------------------------|
| 28000.00         | .1580570                | 04 | .2420374               | 01- 227.50                    | 2.20-                        | 3.47-                       |
| 29000.00         | .1363473                | 04 | .2068553               | 01- 229.63                    | 1.93-                        | 3.69-                       |
| 30000.00         | .1177854                | 04 | .1770519               | 01- 231.76                    | 1.60-                        | 3.82-                       |
| 31000.00         | .1018915                | 04 | .1517654               | 01- 233.89                    | 1.19-                        | 3.89-                       |
| 32000.00         | .8826219                | 03 | .1302779               | 01- 236.02                    | .72-                         | 3.88-                       |
| 33000.00         | .7655810                | 03 | .1119913               | 01- 238.15                    | .22-                         | 3.23-                       |
| 34000.00         | .6649439                | 03 | .9638231               | 02- 240.35                    | .23                          | 2.52-                       |
| 35000.00         | .5783479                | 03 | .8297509               | 02- 242.82                    | .65                          | 1.96-                       |
| 36000.00         | .5037640                | 03 | .7154465               | 02- 245.30                    | 1.05                         | 1.42-                       |
| 37000.00         | .4394265                | 03 | .6178343               | 02- 247.78                    | 1.42                         | .91-                        |
| 38000.00         | .3838434                | 03 | .5343416               | 02- 250.26                    | 1.77                         | .43-                        |
| 39000.00         | .3357521                | 03 | .4628128               | 02- 252.73                    | 2.10                         | .03                         |
| 40000.00         | .2940525                | 03 | .4020020               | 02- 254.83                    | 2.40                         | .60                         |
| 41000.00         | .2577736                | 03 | .3505332               | 02- 256.19                    | 2.64                         | 1.41                        |
| 42000.00         | .2261376                | 03 | .3058886               | 02- 257.55                    | 2.80                         | 2.14                        |
| 43000.00         | .1985292                | 03 | .2671324               | 02- 258.91                    | 2.89                         | 2.78                        |
| 44000.00         | .1744174                | 03 | .2334618               | 02- 260.27                    | 2.90                         | 3.35                        |
| 45000.00         | .1534094                | 03 | .2029178               | 02- 263.38                    | 2.88                         | 3.19                        |
| 46000.00         | .1351422                | 03 | .1766357               | 02- 266.54                    | 2.89                         | 3.04                        |
| 47000.00         | .1192328                | 03 | .1540153               | 02- 269.70                    | 2.91                         | 2.91                        |
| 48000.00         | .1053229                | 03 | .1351126               | 02- 271.57                    | 2.95                         | 2.61                        |
| 49000.00         | .9306481                | 02 | .1196799               | 02- 270.90                    | 3.02                         | 2.92                        |
| 50000.00         | .8221160                | 02 | .1059826               | 02- 270.24                    | 3.05                         | 3.20                        |
| 51000.00         | .7260473                | 02 | .9382847               | 03- 269.58                    | 3.04                         | 3.46                        |
| 52000.00         | .6405595                | 02 | .8397679               | 03- 265.74                    | 2.93                         | 4.84                        |
| 53000.00         | .5640040                | 02 | .7528970               | 03- 260.97                    | 2.63                         | 5.99                        |
| 54000.00         | .4954553                | 02 | .6736837               | 03- 256.21                    | 2.17                         | 6.70                        |
| 55000.00         | .4343416                | 02 | .5987657               | 03- 252.71                    | 1.59                         | 6.78                        |
| 56000.00         | .3803675                | 02 | .5257709               | 03- 252.03                    | 1.00                         | 5.65                        |
| 57000.00         | .3329952                | 02 | .4615323               | 03- 251.35                    | .48                          | 4.60                        |
| 58000.00         | .2914300                | 02 | .4050162               | 03- 250.68                    | .02                          | 3.62                        |
| 59000.00         | .2549698                | 02 | .3553434               | 03- 249.97                    | .38-                         | 2.71                        |
| 60000.00         | .2229960                | 02 | .3116626               | 03- 249.27                    | .71-                         | 1.87                        |
| 61000.00         | .1949659                | 02 | .2732610               | 03- 248.56                    | .99-                         | 1.10                        |
| 62000.00         | .1703071                | 02 | .2413547               | 03- 245.83                    | 1.24-                        | .85                         |
| 63000.00         | .1484998                | 02 | .2138426               | 03- 241.93                    | 1.49-                        | .62                         |
| 64000.00         | .1292024                | 02 | .1891025               | 03- 238.03                    | 1.75-                        | .38                         |
| 65000.00         | .1121594                | 02 | .1668926               | 03- 234.12                    | 2.01-                        | .14                         |
| 66000.00         | .9710818                | 01 | .1475688               | 03- 229.25                    | 2.31-                        | .29                         |
| 67000.00         | .8381808                | 01 | .1301942               | 03- 224.28                    | 2.68-                        | .42                         |
| 68000.00         | .7211207                | 01 | .1145488               | 03- 219.31                    | 3.13-                        | .48                         |
| 69000.00         | .6183039                | 01 | .1004930               | 03- 214.35                    | 3.67-                        | .49                         |
| 70000.00         | .5285236                | 01 | .8738751               | 04- 210.70                    | 4.26-                        | .16-                        |
| 71000.00         | .4506198                | 01 | .7570589               | 04- 207.36                    | 4.83-                        | .96-                        |
| 72000.00         | .3832253                | 01 | .6543657               | 04- 204.02                    | 5.38-                        | 1.73-                       |
| 73000.00         | .3250573                | 01 | .5642731               | 04- 200.69                    | 5.90-                        | 2.48-                       |
| 74000.00         | .2748746                | 01 | .4873017               | 04- 196.51                    | 6.42-                        | 2.83-                       |
| 75000.00         | .2316012                | 01 | .4198076               | 04- 192.19                    | 7.00-                        | 3.15-                       |
| 76000.00         | .1943930                | 01 | .3604586               | 04- 187.88                    | 7.63-                        | 3.51-                       |
| 77000.00         | .1625183                | 01 | .3082371               | 04- 183.68                    | 8.31-                        | 3.97-                       |
| 78000.00         | .1355107                | 01 | .2589113               | 04- 182.33                    | 8.91-                        | 5.85-                       |
| 79000.00         | .1128456                | 01 | .2172104               | 04- 180.99                    | 9.30-                        | 7.53-                       |
| 80000.00         | .9384846                | 00 | .1819975               | 04- 179.64                    | 9.46-                        | 8.95-                       |
| 81000.00         | .7790583                | 00 | .1530632               | 04- 177.32                    | 9.62-                        | 7.90-                       |
| 82000.00         | .6446204                | 00 | .12914870              | 04- 173.43                    | 10.08-                       | 6.30-                       |
| 83000.00         | .5311293                | 00 | .1091344               | 04- 169.55                    | 10.92-                       | 5.10-                       |
| 84000.00         | .4368486                | 00 | .8940805               | 05- 170.22                    | 11.91-                       | 6.50-                       |
| 85000.00         | .3615696                | 00 | .6965497               | 05- 180.84                    | 12.34-                       | 12.43-                      |
| 86000.00         | .3025281                | 00 | .5504793               | 05- 191.46                    | 11.83-                       | 16.80-                      |
| 87000.00         | .2556280                | 00 | .4399175               | 05- 202.44                    | 10.44-                       | 20.07-                      |
| 88000.00         | .2179480                | 00 | .3556156               | 05- 213.51                    | 8.21-                        | 22.33-                      |
| 89000.00         | .1870715                | 00 | .2955873               | 05- 220.48                    | 5.30-                        | 22.41-                      |
| 90000.00         | .1609050                | 00 | .2555414               | 05- 219.36                    | 2.11-                        | 19.38-                      |
| 91000.00         | .1382983                | 00 | .2207665               | 05- 218.24                    | .96                          | 15.02-                      |
| 92000.00         | .1184929                | 00 | .1962640               | 05- 210.33                    | 3.49                         | 8.16-                       |
| 93000.00         | .1009216                | 00 | .1738524               | 05- 202.23                    | 5.15                         | 1.38-                       |

# FIGURE 41

## NATAL, 2 OCTOBER 1966, 0220 GMT.

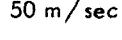
| WIND DIRECTION<br>degrees | WIND SPEED<br>m/sec | ERROR<br>m/sec ( $\pm$ ) | TEMPERATURE<br>degrees Kelvin | ERROR<br>degrees Kelvin ( $\pm$ ) | HEIGHT<br>meters |
|---------------------------|---------------------|--------------------------|-------------------------------|-----------------------------------|------------------|
| 92.26                     | 20.83               | 4.90                     | 237.81                        | .90                               | 33743.60         |
| 59.19                     | 5.01                | 6.29                     | 252.03                        | 1.14                              | 39345.30         |
| 11.98                     | 2.25                | 7.31                     | 266.84                        | 1.52                              | 43557.45         |
| 42.08                     | 11.02               | 2.01                     | 271.89                        | .41                               | 47070.60         |
| 204.56                    | 20.94               | 3.68                     | 265.45                        | .87                               | 50499.05         |
| 212.21                    | 20.30               | 4.80                     | 258.20                        | 1.12                              | 55460.00         |
| 262.36                    | 35.69               | 15.64                    | 244.08                        | 2.90                              | 60279.95         |
| 323.87                    | 34.25               | 11.45                    | 241.53                        | 3.33                              | 63854.90         |
| 358.88                    | 25.50               | 17.32                    | 219.56                        | 3.61                              | 67811.70         |
| 85.58                     | 38.35               | 16.00                    | 195.59                        | 2.57                              | 71611.04         |
| 294.29                    | 9.85                | 3.16                     | 184.31                        | 1.96                              | 75272.30         |
| 230.04                    | 13.76               | 10.97                    | 185.52                        | 2.83                              | 78787.79         |
| 267.62                    | 33.35               | 29.07                    | 191.78                        | 4.97                              | 81710.19         |
| 91.30                     | 63.14               | 19.08                    | 226.54                        | 3.91                              | 84107.60         |
| 166.13                    | 55.18               | 17.20                    | 252.10                        | 4.65                              | 86438.35         |
| 78.60                     | 36.85               | 28.87                    | 230.49                        | 5.77                              | 88686.30         |
| 147.10                    | 68.91               | 25.96                    | 218.69                        | 5.69                              | 90800.50         |



WIND COMPONENTS  
m/sec

| HEIGHT<br>meters | SOUTH<br>component (+) | WEST<br>component (+) |
|------------------|------------------------|-----------------------|
| 35000.00         | .06                    | -17.11                |
| 40000.00         | -2.51                  | -3.70                 |
| 45000.00         | -4.65                  | -3.30                 |
| 50000.00         | 15.08                  | 6.36                  |
| 55000.00         | 17.35                  | 10.62                 |
| 60000.00         | 5.46                   | 33.94                 |
| 65000.00         | -27.03                 | 14.49                 |
| 70000.00         | -12.51                 | -21.81                |
| 75000.00         | -3.85                  | 6.26                  |
| 80000.00         | 5.74                   | 19.99                 |
| 85000.00         | 21.41                  | -44.12                |
| 90000.00         | 33.19                  | -36.93                |

### LEGEND

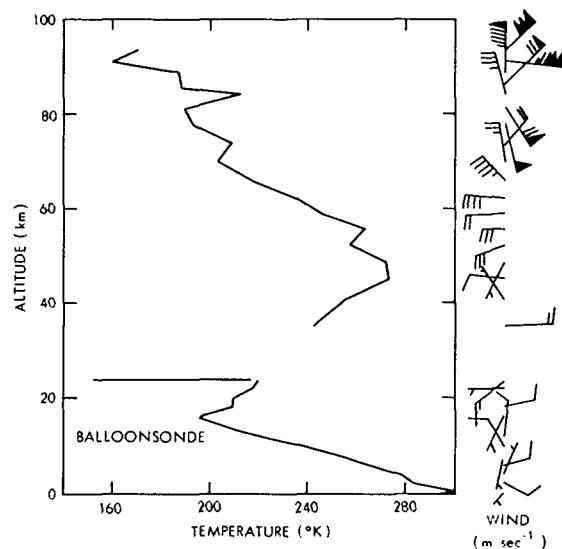
 5 m/sec or less  
  10 m/sec  
  50 m/sec  
 DIRECTION OF NORTH WIND

| HEIGHT<br>meters | PRESSURE<br>nt./sq meter | DENSITY<br>kg./cu meter | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>(%) | DENSITY<br>deviation<br>(%) |        |        |
|------------------|--------------------------|-------------------------|-------------------------------|------------------------------|-----------------------------|--------|--------|
| 26000.00         | .1569299                 | 04                      | .2413732                      | 01-                          | 226.50                      | 2.20-  | 3.74-  |
| 28000.00         | .1352609                 | 04                      | .2062806                      | 01-                          | 228.47                      | 2.70-  | 3.95-  |
| 30000.00         | .1167708                 | 04                      | .1765760                      | 01-                          | 230.44                      | 2.45-  | 4.10-  |
| 31000.00         | .1009249                 | 04                      | .1512875                      | 01-                          | 232.40                      | 2.13-  | 4.20-  |
| 32000.00         | .8734059                 | 03                      | .1298248                      | 01-                          | 234.37                      | 1.76-  | 4.22-  |
| 33000.00         | .7567953                 | 03                      | .1115546                      | 01-                          | 236.34                      | 1.37-  | 3.60-  |
| 34000.00         | .6565914                 | 03                      | .9592580                      | 02-                          | 238.46                      | 1.02-  | 2.98-  |
| 35000.00         | .5704655                 | 03                      | .8246505                      | 02-                          | 241.00                      | .71-   | 2.56-  |
| 36000.00         | .4963895                 | 03                      | .7108873                      | 02-                          | 243.53                      | .42-   | 2.16-  |
| 37000.00         | .4325744                 | 03                      | .6124148                      | 02-                          | 246.07                      | .15-   | 1.78-  |
| 38000.00         | .3775122                 | 03                      | .5290027                      | 02-                          | 248.61                      | .09    | 1.42-  |
| 39000.00         | .3299287                 | 03                      | .4576509                      | 02-                          | 251.15                      | .33    | 1.08-  |
| 40000.00         | .2887944                 | 03                      | .3955877                      | 02-                          | 254.33                      | .57    | .99-   |
| 41000.00         | .2532390                 | 03                      | .3421564                      | 02-                          | 257.84                      | .83    | 1.00-  |
| 42000.00         | .2224654                 | 03                      | .2965359                      | 02-                          | 261.36                      | 1.13   | .98-   |
| 43000.00         | .1957777                 | 03                      | .2575000                      | 02-                          | 264.87                      | 1.46   | .92-   |
| 44000.00         | .1725513                 | 03                      | .2247492                      | 02-                          | 267.47                      | 1.80   | .50-   |
| 45000.00         | .1522310                 | 03                      | .1972221                      | 02-                          | 268.91                      | 2.09   | .30    |
| 46000.00         | .1343987                 | 03                      | .1731939                      | 02-                          | 270.34                      | 2.32   | 1.04   |
| 47000.00         | .1187382                 | 03                      | .1522037                      | 02-                          | 271.78                      | 2.49   | 1.70   |
| 48000.00         | .1049014                 | 03                      | .1352853                      | 02-                          | 270.14                      | 2.54   | 2.74   |
| 49000.00         | .9260565                 | 02                      | .1202641                      | 02-                          | 268.26                      | 2.51   | 3.42   |
| 50000.00         | .8168273                 | 02                      | .1068265                      | 02-                          | 266.38                      | 2.38   | 4.02   |
| 51000.00         | .7192063                 | 02                      | .9474468                      | 03-                          | 264.71                      | 2.17   | 4.47   |
| 52000.00         | .6340355                 | 02                      | .8320677                      | 03-                          | 263.25                      | 1.88   | 4.75   |
| 53000.00         | .5580349                 | 02                      | .7426134                      | 03-                          | 261.79                      | 1.54   | 4.55   |
| 54000.00         | .4908129                 | 02                      | .6568239                      | 03-                          | 260.33                      | 1.21   | 4.03   |
| 55000.00         | .4313940                 | 02                      | .5805670                      | 03-                          | 258.86                      | .90    | 3.53   |
| 56000.00         | .3788312                 | 02                      | .5143067                      | 03-                          | 256.61                      | .60    | 3.35   |
| 57000.00         | .3322475                 | 02                      | .4562723                      | 03-                          | 253.68                      | .25    | 2.41   |
| 58000.00         | .2909605                 | 02                      | .4042407                      | 03-                          | 250.75                      | .14-   | 3.42   |
| 59000.00         | .254176                  | 02                      | .3576483                      | 03-                          | 247.82                      | .59-   | 3.38   |
| 60000.00         | .2221188                 | 02                      | .3159790                      | 03-                          | 244.89                      | 1.10-  | 3.28   |
| 61000.00         | .1936993                 | 02                      | .2770579                      | 03-                          | 243.56                      | 1.67-  | 2.50   |
| 62000.00         | .1688260                 | 02                      | .2421882                      | 03-                          | 242.85                      | 2.10-  | 1.20   |
| 63000.00         | .1470938                 | 02                      | .2116327                      | 03-                          | 242.14                      | 2.42-  | .41-   |
| 64000.00         | .1280868                 | 02                      | .1853690                      | 03-                          | 240.72                      | 2.59-  | 1.59-  |
| 65000.00         | .1113143                 | 02                      | .1649001                      | 03-                          | 235.17                      | 2.75-  | 1.05-  |
| 66000.00         | .9641841                 | 01                      | .1462884                      | 03-                          | 229.62                      | 3.00-  | .57-   |
| 67000.00         | .8322641                 | 01                      | .1294031                      | 03-                          | 224.06                      | 3.37-  | .18-   |
| 68000.00         | .7157450                 | 01                      | .1141865                      | 03-                          | 218.37                      | 3.86-  | .17    |
| 69000.00         | .6129902                 | 01                      | .1006899                      | 03-                          | 212.09                      | 4.50-  | .69    |
| 70000.00         | .5225725                 | 01                      | .8845769                      | 04-                          | 205.81                      | 5.34-  | 1.05   |
| 71000.00         | .4433160                 | 01                      | .7740409                      | 04-                          | 199.53                      | 6.37-  | 1.25   |
| 72000.00         | .3743269                 | 01                      | .6705462                      | 04-                          | 194.48                      | 7.57-  | .69    |
| 73000.00         | .3149644                 | 01                      | .5733717                      | 04-                          | 191.37                      | 8.82-  | .91-   |
| 74000.00         | .2642821                 | 01                      | .4890511                      | 04-                          | 188.26                      | 10.03- | 2.48-  |
| 75000.00         | .2211207                 | 01                      | .4160504                      | 04-                          | 185.15                      | 11.21- | 4.02-  |
| 76000.00         | .1846851                 | 01                      | .3486236                      | 04-                          | 184.56                      | 12.24- | 6.68-  |
| 77000.00         | .1542498                 | 01                      | .2906230                      | 04-                          | 184.90                      | 12.97- | 9.46-  |
| 78000.00         | .1288780                 | 01                      | .2423679                      | 04-                          | 185.25                      | 13.37- | 11.86- |
| 79000.00         | .1077410                 | 01                      | .2018273                      | 04-                          | 185.97                      | 13.40- | 14.07- |
| 80000.00         | .9019913                 | 00                      | .1670451                      | 04-                          | 188.11                      | 12.98- | 16.43- |
| 81000.00         | .7566936                 | 00                      | .1385608                      | 04-                          | 190.25                      | 12.22- | 16.63- |
| 82000.00         | .6371015                 | 00                      | .1132558                      | 04-                          | 195.97                      | 11.13- | 18.04- |
| 83000.00         | .5410175                 | 00                      | .8954950                      | 05-                          | 210.47                      | 9.26-  | 22.13- |
| 84000.00         | .4644794                 | 00                      | .7192574                      | 05-                          | 224.97                      | 6.34-  | 24.78- |
| 85000.00         | .4022195                 | 00                      | .5929425                      | 05-                          | 236.32                      | 2.49-  | 25.46- |
| 86000.00         | .3506418                 | 00                      | .4939857                      | 05-                          | 247.29                      | 2.18   | 25.34- |
| 87000.00         | .3065798                 | 00                      | .4329456                      | 05-                          | 246.69                      | 7.40   | 21.34- |
| 88000.00         | .2673035                 | 00                      | .3927821                      | 05-                          | 237.08                      | 12.56  | 14.22- |
| 89000.00         | .2318415                 | 00                      | .3531050                      | 05-                          | 228.74                      | 17.35  | 7.32-  |
| 90000.00         | .2002146                 | 00                      | .3125640                      | 05-                          | 223.15                      | 21.80  | 1.40-  |

# FIGURE 42

## NATAL, 2 OCTOBER 1966, 0820 GMT.

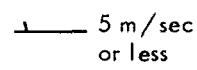
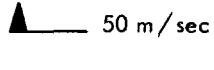
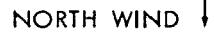
| WIND DIRECTION<br>degrees | WIND SPEED<br>m/sec | ERROR<br>m/sec ( $\pm$ ) | TEMPERATURE<br>degrees Kelvin | ERROR<br>degrees Kelvin ( $\pm$ ) | HEIGHT<br>meters |
|---------------------------|---------------------|--------------------------|-------------------------------|-----------------------------------|------------------|
| 88.97                     | 16.94               | 2.70                     | 241.59                        | .43                               | 35104.30         |
| 332.78                    | 3.79                | 2.41                     | 255.09                        | 1.20                              | 40828.15         |
| 281.16                    | 10.69               | 9.51                     | 273.36                        | 2.14                              | 45120.75         |
| 202.60                    | 7.33                | 15.73                    | 271.83                        | 2.66                              | 48707.60         |
| 246.40                    | 31.93               | 15.21                    | 257.17                        | 2.92                              | 52202.00         |
| 271.81                    | 27.51               | 13.66                    | 262.76                        | 2.32                              | 55598.40         |
| 265.71                    | 21.38               | 9.65                     | 245.30                        | 1.65                              | 53918.35         |
| 281.40                    | 42.12               | 13.29                    | 234.94                        | 2.19                              | 62146.55         |
| 323.45                    | 45.17               | 7.59                     | 217.41                        | 1.47                              | 65781.94         |
| 358.11                    | 25.48               | 4.93                     | 203.41                        | 1.05                              | 69812.24         |
| 37.63                     | 21.93               | 11.09                    | 208.45                        | 2.09                              | 73689.24         |
| 163.36                    | 51.48               | 11.15                    | 193.26                        | 1.97                              | 77422.35         |
| 146.87                    | 70.09               | 11.45                    | 189.34                        | 1.79                              | 81004.15         |
| 349.23                    | 35.96               | 22.14                    | 211.77                        | 5.98                              | 84016.10         |
| 45.19                     | 72.24               | 29.93                    | 188.43                        | 4.88                              | 86495.80         |
| .23                       | 93.01               | 15.34                    | 186.55                        | 2.85                              | 88876.39         |
| 92.92                     | 126.67              | 49.06                    | 159.77                        | 6.75                              | 91178.05         |
| 48.46                     | 148.18              | 133.23                   | 169.92                        | 20.48                             | 93380.60         |



WIND COMPONENTS  
m/sec

| HEIGHT<br>meters | SOUTH<br>component (+) | WEST<br>component (+) |
|------------------|------------------------|-----------------------|
| 40000.00         | -2.92                  | -.96                  |
| 45000.00         | -2.10                  | 10.24                 |
| 50000.00         | 8.99                   | 12.59                 |
| 55000.00         | 1.53                   | 27.80                 |
| 60000.00         | -1.72                  | 28.01                 |
| 65000.00         | -30.27                 | 29.99                 |
| 70000.00         | -25.07                 | .15                   |
| 75000.00         | 6.04                   | -13.86                |
| 80000.00         | 56.06                  | -31.70                |
| 85000.00         | -41.50                 | -16.28                |
| 90000.00         | -44.45                 | -61.95                |

### LEGEND

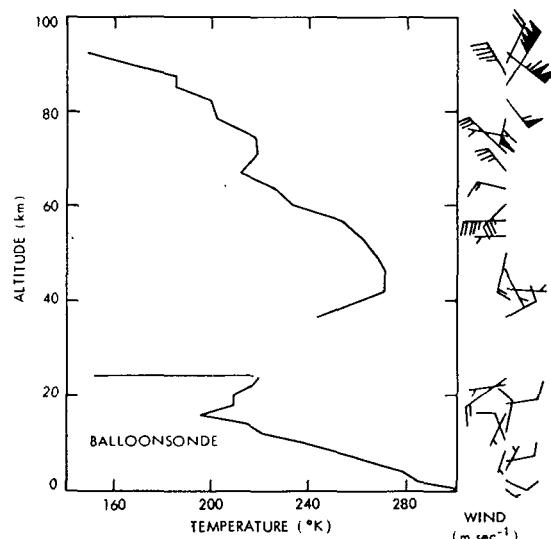
   
 

| HEIGHT<br>meters | PRESSURE<br>nt/sq meter |     | DENSITY<br>kg/cu meter | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>(%) | DENSITY<br>deviation<br>(%) |
|------------------|-------------------------|-----|------------------------|-------------------------------|------------------------------|-----------------------------|
| 29000.00         | .1390673                | 04  | .2109019               | 01-                           | 229.72                       | .01                         |
| 30000.00         | .1201347                | 04  | .1806612               | 01-                           | 231.66                       | .36                         |
| 31000.00         | .1039112                | 04  | .1549639               | 01-                           | 233.61                       | .76                         |
| 32000.00         | .8999082                | 03  | .1330968               | 01-                           | 235.55                       | 1.22                        |
| 33000.00         | .7803085                | 03  | .1144635               | 01-                           | 237.49                       | 1.69                        |
| 34000.00         | .6774209                | 03  | .9856422               | 02-                           | 239.44                       | 2.11                        |
| 35000.00         | .5887978                | 03  | .8497981               | 02-                           | 241.38                       | 2.47                        |
| 36000.00         | .5124213                | 03  | .7325388               | 02-                           | 243.70                       | 2.78                        |
| 37000.00         | .4465629                | 03  | .6322704               | 02-                           | 246.05                       | 3.07                        |
| 38000.00         | .3896965                | 03  | .5465166               | 02-                           | 248.41                       | 3.33                        |
| 39000.00         | .3405240                | 03  | .4730644               | 02-                           | 250.77                       | 3.55                        |
| 40000.00         | .2979445                | 03  | .4100551               | 02-                           | 253.13                       | 3.76                        |
| 41000.00         | .2610452                | 03  | .3555006               | 02-                           | 255.82                       | 3.94                        |
| 42000.00         | .2291319                | 03  | .3069325               | 02-                           | 260.07                       | 4.16                        |
| 43000.00         | .2015544                | 03  | .2650431               | 02-                           | 264.33                       | 4.45                        |
| 44000.00         | .1776666                | 03  | .2304484               | 02-                           | 268.59                       | 4.82                        |
| 45000.00         | .1569270                | 03  | .2003716               | 02-                           | 272.84                       | 5.24                        |
| 46000.00         | .1387536                | 03  | .1770770               | 02-                           | 272.98                       | 5.64                        |
| 47000.00         | .1226806                | 03  | .1568101               | 02-                           | 272.55                       | 5.89                        |
| 48000.00         | .1084525                | 03  | .1368414               | 02-                           | 272.13                       | 6.01                        |
| 49000.00         | .9583582                | 02  | .1232827               | 02-                           | 270.60                       | 6.08                        |
| 50000.00         | .8457840                | 02  | .1106046               | 02-                           | 266.40                       | 6.01                        |
| 51000.00         | .7449636                | 02  | .9898182               | 03-                           | 262.21                       | 5.73                        |
| 52000.00         | .6548806                | 02  | .8842540               | 03-                           | 258.01                       | 5.23                        |
| 53000.00         | .5751659                | 02  | .7752151               | 03-                           | 256.48                       | 4.66                        |
| 54000.00         | .5054412                | 02  | .6769242               | 03-                           | 260.12                       | 4.23                        |
| 55000.00         | .4445492                | 02  | .5916255               | 03-                           | 261.77                       | 3.98                        |
| 56000.00         | .3910584                | 02  | .5226868               | 03-                           | 260.65                       | 3.84                        |
| 57000.00         | .3434711                | 02  | .4685374               | 03-                           | 255.39                       | 3.64                        |
| 58000.00         | .3008734                | 02  | .4190601               | 03-                           | 250.13                       | 3.26                        |
| 59000.00         | .2628412                | 02  | .3736970               | 03-                           | 245.03                       | 2.69                        |
| 60000.00         | .2290983                | 02  | .3300458               | 03-                           | 241.82                       | 2.00                        |
| 61000.00         | .1993297                | 02  | .2910228               | 03-                           | 238.61                       | 1.22                        |
| 62000.00         | .1731100                | 02  | .2561879               | 03-                           | 235.40                       | .37                         |
| 63000.00         | .1499915                | 02  | .2263849               | 03-                           | 230.82                       | .50-                        |
| 64000.00         | .1295832                | 02  | .1997556               | 03-                           | 226.00                       | 1.46-                       |
| 65000.00         | .1116441                | 02  | .1757916               | 03-                           | 221.17                       | 2.49-                       |
| 66000.00         | .9581808                | 01  | .1540809               | 03-                           | 216.64                       | 3.61-                       |
| 67000.00         | .8203585                | 01  | .1340670               | 03-                           | 213.17                       | 4.75-                       |
| 68000.00         | .7006055                | 01  | .1163922               | 03-                           | 209.70                       | 5.89-                       |
| 69000.00         | .5967889                | 01  | .1008143               | 03-                           | 206.23                       | 7.02-                       |
| 70000.00         | .5071810                | 01  | .8676077               | 04-                           | 203.65                       | 8.12-                       |
| 71000.00         | .4308316                | 01  | .7323246               | 04-                           | 204.95                       | 9.01-                       |
| 72000.00         | .3663718                | 01  | .6188298               | 04-                           | 206.25                       | 9.54-                       |
| 73000.00         | .3118896                | 01  | .5235045               | 04-                           | 207.55                       | 9.71-                       |
| 74000.00         | .2656180                | 01  | .4466308               | 04-                           | 207.18                       | 9.57-                       |
| 75000.00         | .2258291                | 01  | .3873352               | 04-                           | 203.12                       | 9.32-                       |
| 76000.00         | .1913807                | 01  | .3349619               | 04-                           | 199.04                       | 9.06-                       |
| 77000.00         | .1616419                | 01  | .2888172               | 04-                           | 194.98                       | 8.80-                       |
| 78000.00         | .1361506                | 01  | .2462402               | 04-                           | 192.62                       | 8.48-                       |
| 79000.00         | .1145091                | 01  | .2082844               | 04-                           | 191.53                       | 7.96-                       |
| 80000.00         | .9621718                | 00  | .1760196               | 04-                           | 190.43                       | 7.18-                       |
| 81000.00         | .8077047                | 00  | .1486166               | 04-                           | 189.34                       | 6.30-                       |
| 82000.00         | .6800029                | 00  | .1204047               | 04-                           | 196.75                       | 5.14-                       |
| 83000.00         | .5761859                | 00  | .9830035               | 05-                           | 204.20                       | 3.36-                       |
| 84000.00         | .4911502                | 00  | .8084348               | 05-                           | 211.65                       | .96-                        |
| 85000.00         | .4184083                | 00  | .7197905               | 05-                           | 202.51                       | 1.43                        |
| 86000.00         | .3537670                | 00  | .6382909               | 05-                           | 193.09                       | 3.10                        |
| 87000.00         | .2972686                | 00  | .5507686               | 05-                           | 188.03                       | 4.14                        |
| 88000.00         | .2491177                | 00  | .4635016               | 05-                           | 187.24                       | 4.90                        |
| 89000.00         | .2084885                | 00  | .3923720               | 05-                           | 185.11                       | 5.53                        |
| 90000.00         | .1732959                | 00  | .3480208               | 05-                           | 173.47                       | 5.42                        |
| 91000.00         | .1422141                | 00  | .3061399               | 05-                           | 161.83                       | 3.82                        |
| 92000.00         | .1160226                | 00  | .2471350               | 05-                           | 163.55                       | 1.33                        |
| 93000.00         | .9502776                | 01- | .1968648               | 05-                           | 168.16                       | 9.8-                        |

# FIGURE 43

## NATAL, 2 OCTOBER 1966, 1409 GMT.

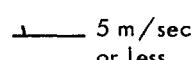
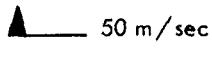
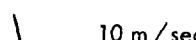
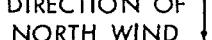
| WIND DIRECTION<br>degrees | WIND SPEED<br>m/sec | ERROR<br>m/sec ( $\pm$ ) | TEMPERATURE<br>degrees Kelvin | ERROR<br>degrees Kelvin ( $\pm$ ) | HEIGHT<br>meters |
|---------------------------|---------------------|--------------------------|-------------------------------|-----------------------------------|------------------|
| 63.51                     | 9.39                | 1.75                     | 242.64                        | .36                               | 36482.65         |
| 95.01                     | 5.45                | 2.50                     | 270.75                        | .51                               | 42180.50         |
| 150.03                    | 7.36                | 5.78                     | 271.03                        | 1.15                              | 46490.75         |
| 195.73                    | 15.61               | 6.93                     | 266.72                        | 1.82                              | 50049.60         |
| 268.45                    | 5.48                | 4.59                     | 261.99                        | 1.95                              | 53519.15         |
| 269.23                    | 44.30               | 8.13                     | 253.81                        | 1.60                              | 56900.70         |
| 234.89                    | 35.22               | 12.23                    | 233.79                        | 2.97                              | 60197.55         |
| 287.78                    | 13.10               | 9.11                     | 226.91                        | 3.30                              | 63425.60         |
| 328.76                    | 35.86               | 9.49                     | 212.16                        | 2.54                              | 67072.90         |
| 318.41                    | 31.50               | 11.08                    | 218.76                        | 3.11                              | 71092.65         |
| 280.58                    | 3.02                | 9.21                     | 218.38                        | 2.61                              | 74953.49         |
| 196.77                    | 60.72               | 11.02                    | 202.58                        | 3.02                              | 78687.55         |
| 142.03                    | 53.30               | 33.43                    | 199.89                        | 6.99                              | 82271.20         |
| 34.63                     | 159.37              | 39.07                    | 185.91                        | 9.02                              | 85261.35         |
| 335.52                    | 44.25               | 18.79                    | 185.96                        | 6.50                              | 87711.14         |
| 20.98                     | 17.66               | 30.90                    | 166.18                        | 7.00                              | 90072.99         |
| 124.05                    | 113.44              | 52.19                    | 149.02                        | 7.97                              | 92361.99         |



WIND COMPONENTS  
m/sec

| HEIGHT<br>meters | SOUTH<br>component (+) | WEST<br>component (+) |
|------------------|------------------------|-----------------------|
| 40000.00         | -1.30                  | -6.56                 |
| 45000.00         | 4.33                   | -4.28                 |
| 50000.00         | 14.83                  | 4.38                  |
| 55000.00         | .34                    | 22.47                 |
| 60000.00         | 19.07                  | 29.73                 |
| 65000.00         | -15.51                 | 15.11                 |
| 70000.00         | -25.49                 | 20.28                 |
| 75000.00         | .17                    | 3.15                  |
| 80000.00         | 52.23                  | -.90                  |
| 85000.00         | -116.00                | -85.51                |
| 90000.00         | -17.22                 | -5.55                 |

### LEGEND

 5 m/sec or less  
 50 m/sec  
 10 m/sec  
 DIRECTION OF NORTH WIND

| HEIGHT<br>meters | PRESSURE<br>n <sup>t</sup> /sq meter | DENSITY<br>kg./cu meter | TEMPERATURE<br>degrees Kelvin | PRESSURE<br>deviation<br>(%) | DENSITY<br>deviation<br>(%) |       |        |
|------------------|--------------------------------------|-------------------------|-------------------------------|------------------------------|-----------------------------|-------|--------|
| 20000.00         | .1388663                             | .04                     | .2112643                      | .01-                         | 228.99                      | .12-  | 1.63-  |
| 30000.00         | .1194011                             | .04                     | .1809710                      | .01-                         | 230.81                      | .16   | 1.70-  |
| 31000.00         | .1036503                             | .04                     | .1552175                      | .01-                         | 232.64                      | .50   | 1.71-  |
| 32000.00         | .8970618                             | .03                     | .1332444                      | .01-                         | 234.46                      | .90   | 1.66-  |
| 33000.00         | .7773162                             | .03                     | .1146080                      | .01-                         | 236.28                      | 1.30  | .97-   |
| 34000.00         | .6743123                             | .03                     | .9865995                      | .02-                         | 238.11                      | 1.64  | .21-   |
| 35000.00         | .5856182                             | .03                     | .8503201                      | .02-                         | 239.93                      | 1.91  | .47    |
| 36000.00         | .5091555                             | .03                     | .7337218                      | .02-                         | 241.75                      | 2.13  | 1.09   |
| 37000.00         | .4433637                             | .03                     | .6299673                      | .02-                         | 245.18                      | 2.33  | 1.02   |
| 38000.00         | .3869923                             | .03                     | .5390220                      | .02-                         | 250.12                      | 2.61  | .44    |
| 39000.00         | .3387010                             | .03                     | .4626322                      | .02-                         | 255.05                      | 3.00  | .00-   |
| 40000.00         | .2972059                             | .03                     | .3982492                      | .02-                         | 259.99                      | 3.50  | .33-   |
| 41000.00         | .2614466                             | .03                     | .3438072                      | .02-                         | 264.92                      | 4.10  | .53-   |
| 42000.00         | .2305437                             | .03                     | .2976256                      | .02-                         | 269.86                      | 4.80  | .62-   |
| 43000.00         | .2035803                             | .03                     | .2619007                      | .02-                         | 270.80                      | 5.50  | .77    |
| 44000.00         | .1798217                             | .03                     | .2312806                      | .02-                         | 270.87                      | 6.09  | 2.38   |
| 45000.00         | .1588445                             | .03                     | .2042515                      | .02-                         | 270.93                      | 6.53  | 3.87   |
| 46000.00         | .1403241                             | .03                     | .1803958                      | .02-                         | 270.99                      | 6.84  | 5.24   |
| 47000.00         | .1239526                             | .03                     | .1596925                      | .02-                         | 270.41                      | 6.99  | 6.71   |
| 48000.00         | .1094501                             | .03                     | .1416437                      | .02-                         | 261.20                      | 6.99  | 7.57   |
| 49000.00         | .9659403                             | .02                     | .1255717                      | .02-                         | 267.98                      | 6.92  | 7.99   |
| 50000.00         | .8520303                             | .02                     | .1112669                      | .02-                         | 266.77                      | 6.79  | 8.35   |
| 51000.00         | .7511279                             | .02                     | .9859096                      | .03-                         | 265.42                      | 6.60  | 9.71   |
| 52000.00         | .6617728                             | .02                     | .8731076                      | .03-                         | 264.05                      | 6.34  | 9.00   |
| 53000.00         | .5826885                             | .02                     | .7727564                      | .03-                         | 262.59                      | 6.03  | 8.79   |
| 54000.00         | .5126721                             | .02                     | .6847776                      | .03-                         | 260.82                      | 5.72  | 8.46   |
| 55000.00         | .4506103                             | .02                     | .6075156                      | .03-                         | 258.40                      | 5.40  | 8.34   |
| 56000.00         | .3955555                             | .02                     | .5383860                      | .03-                         | 255.98                      | 5.05  | 8.19   |
| 57000.00         | .3468524                             | .02                     | .4772333                      | .03-                         | 253.20                      | 4.66  | 8.16   |
| 58000.00         | .3034185                             | .02                     | .4277298                      | .03-                         | 247.13                      | 4.13  | 9.42   |
| 59000.00         | .2645528                             | .02                     | .3823345                      | .03-                         | 241.06                      | 3.36  | 10.52  |
| 60000.00         | .2298703                             | .02                     | .3407952                      | .03-                         | 234.98                      | 2.34  | 11.40  |
| 61000.00         | .1992057                             | .02                     | .2990348                      | .03-                         | 232.08                      | 1.16  | 10.63  |
| 62000.00         | .1723703                             | .02                     | .2611480                      | .03-                         | 229.95                      | .05-  | 9.12   |
| 63000.00         | .1489559                             | .02                     | .2277845                      | .03-                         | 227.82                      | 1.19- | 7.18   |
| 64000.00         | .1285054                             | .02                     | .1993379                      | .03-                         | 224.58                      | 2.28- | 5.82   |
| 65000.00         | .1106003                             | .02                     | .1747105                      | .03-                         | 220.54                      | 3.37- | 4.83   |
| 66000.00         | .9493031                             | .01                     | .1527596                      | .03-                         | 216.49                      | 4.50- | 3.82   |
| 67000.00         | .8124993                             | .01                     | .1332352                      | .03-                         | 212.45                      | 5.66- | 2.77   |
| 68000.00         | .6947324                             | .01                     | .1132684                      | .03-                         | 213.68                      | 6.68- | .63-   |
| 69000.00         | .5946866                             | .01                     | .9621698                      | .04-                         | 215.32                      | 7.35- | 3.78-  |
| 70000.00         | .5096748                             | .01                     | .8183768                      | .04-                         | 216.96                      | 7.67- | 6.50-  |
| 71000.00         | .4373452                             | .01                     | .6969605                      | .04-                         | 218.61                      | 7.63- | 8.82-  |
| 72000.00         | .3755254                             | .01                     | .5982730                      | .04-                         | 218.67                      | 7.28- | 10.15- |
| 73000.00         | .3224494                             | .01                     | .5139475                      | .04-                         | 218.57                      | 6.65- | 11.18- |
| 74000.00         | .2768706                             | .01                     | .4415004                      | .04-                         | 218.47                      | 5.74- | 11.96- |
| 75000.00         | .2377133                             | .01                     | .3795661                      | .04-                         | 218.18                      | 4.54- | 12.44- |
| 76000.00         | .2037778                             | .01                     | .3318152                      | .04-                         | 213.95                      | 3.17- | 11.18- |
| 77000.00         | .1741586                             | .01                     | .2893075                      | .04-                         | 209.72                      | 1.74- | 9.87-  |
| 78000.00         | .1483762                             | .01                     | .2515540                      | .04-                         | 205.49                      | .26-  | 8.52-  |
| 79000.00         | .1260516                             | .01                     | .2170261                      | .04-                         | 202.34                      | 1.31  | 7.61-  |
| 80000.00         | .1069233                             | .01                     | .1847793                      | .04-                         | 201.59                      | 3.14  | 7.56-  |
| 81000.00         | .9064655                             | .00                     | .1572373                      | .04-                         | 200.84                      | 5.15  | 5.39-  |
| 82000.00         | .7680398                             | .00                     | .1337266                      | .04-                         | 200.08                      | 7.13  | 3.23-  |
| 83000.00         | .6495990                             | .00                     | .1151822                      | .04-                         | 196.48                      | 8.95  | .15    |
| 84000.00         | .5474909                             | .00                     | .9944205                      | .05-                         | 191.80                      | 10.39 | 3.98   |
| 85000.00         | .4595155                             | .00                     | .8554695                      | .05-                         | 187.13                      | 11.39 | 7.53   |
| 86000.00         | .3846372                             | .00                     | .7207241                      | .05-                         | 185.92                      | 12.09 | 8.92   |
| 87000.00         | .3218076                             | .00                     | .6029389                      | .05-                         | 185.94                      | 12.74 | 9.54   |
| 88000.00         | .2689347                             | .00                     | .5104825                      | .05-                         | 183.53                      | 13.25 | 11.48  |
| 89000.00         | .2235457                             | .00                     | .4446102                      | .05-                         | 175.16                      | 13.15 | 16.69  |
| 90000.00         | .1841530                             | .00                     | .3846490                      | .05-                         | 166.79                      | 12.02 | 21.34  |
| 91000.00         | .1502817                             | .00                     | .3288029                      | .05-                         | 159.23                      | 9.71  | 26.56  |
| 92000.00         | .1214470                             | .00                     | .2788412                      | .05-                         | 151.73                      | 6.07  | 30.48  |